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HISTORY AND NOMENCLATURE.

Morgagni (1769) briefly noted the condition, and no doubt there are other early records of the morbid change, but Thomas Hodgkin (1798–1866), demonstrator of morbid anatomy at Guy's Hospital (1825–37), is usually regarded as its sponsor. In 1832 he described "Some Morbid Appearances of the absorbent Glands and Spleen," recording six cases of his own and one of Sir Robert Carswell's. How many of these can be accepted as definitely examples of the disease now called after him it is rather difficult to decide; Samuel Wilks excluded two of the six original cases, but later critics have been more drastic; for example, Dorothy Reed and Symmers accepted two only of the seven. Except for a reference in Bright's lectures on Abdominal Tumours, Hodgkin's paper did not attract any attention, and probably would have remained unnoticed but for the loyal action of his junior, Samuel Wilks, who, in the course of a paper "On Cases of Lardaceous Disease and Some Allied Conditions," in 1856 included an account of a "Peculiar Enlargement of the Lymphatic Glands," which, though not lardaceous, was described because it is either a variety of it or closely akin to it. This is interesting as amyloid disease occasionally complicates Hodgkin's lymphogranuloma, though not so commonly as does tuberculosis which several writers have regarded as its underlying cause. After this paper was completed, but before it was finally printed, Wilks found that Hodgkin had described some of the cases actually in his series, and being one of the editors of *Guy's Hospital Reports* added a paragraph to say that had he been aware of this some of the statements pointing to the originality of his observations would not have appeared. In 1865 he collected 15 cases and perpetuated Hodgkin's name by calling them after him; this was just before Hodgkin's death from dysentery at Jaffa in 1866 and long after he had ceased to be connected with the hospital.

In the meanwhile, Virchow (1864) had described the disease from a pathological point of view as lymphosarcoma, an unfortunate name, as it is often used for a special form of an undoubtedly malignant growth. Cohnheim, in 1865, used the term pseudo-leukæmia for cases in which the glands showed the histological picture of leukæmia without the corresponding blood change, or as it would now be called aleukæmic leukæmia or aleukæmic lymphadenosis. The names lymphosarcoma and pseudo-leukæmia have caused much confusion, but at this long interval of time it is not difficult to be wise. In the same year (1865) Trousseau gave one of his famous clinical lectures on *adénie*, a name which in the following year was expanded into lymphadenoma by Wunderlich, the title of whose paper is worth quoting in full as an epitome of the foregoing sentences—"Pseudo-leukämia, Hodgkin's Krankeit oder multiple Lymphadenome ohne Leukämia." Cornil and Ranvier (1869) adopted lymphadenoma, and apparently it thus came to the notice of Murchison, who introduced it at the Pathological Society in 1870. But recently Agasse-la-font has drawn a distinction between Trousseau's adénie and Hodgkin's disease or lymphogranulomatosis.

From its familiarity and recognised meaning in this country the term lymphadenoma is the most convenient, but etymologically it is a little ambiguous, as it is not clear whether it implies a tumour of lymphadenoid tissue (lymphaden-oma) or, on the analogy of other adenomas, an innocent growth (lymph-adenoma), and also because it quite definitely suggests that it is a neoplasm, just as the alternative names, recently in vogue, lymphogranulomatosis, lymphomatosis granulomatosa, and granulomatosis, which some prefer, as the lesion is not necessarily confined to lymphadenoid tissues, declare it to be an infectious granuloma. From an international point of view, however, "lymphadenoma" has the drawback of being used by some writers, especially the French and by Ewing (1923), and Fox and Farley in America, for conditions, such as lymphoma and hyperplastic lymphadenitis, different from Hodgkin's disease; lymphogranulomatosis benigna has been applied to Boeck's sarcoid of the skin and allied conditions (Schaumann), and malignant lymphadenoma and lymphogranulomatosis maligna or perniciosa has been used as a synonym for Hodgkin's disease.

The eponymous title, Hodgkin's disease, has the advantage of avoiding any hypothesis as to its nature, but it might be thought that as Sir Samuel Wilks was really instrumental in its recognition, it should in justice be called Hodgkin-Wilks disease. The name Hodgkin's lymphogranuloma, used for 17 years by Prof. H. M. Turnbull and also employed by Ewing, has much to recommend it as leaving no doubt as to what is meant. In what follows the names lymphadenoma, Hodgkin's disease, and Hodgkin's lymphogranuloma will be used as synonymous.

The *history of the histology of lymphadenoma* is of some interest. The credit of first describing the lymphadenoma cells and the other features in the glands has been variously ascribed in different countries to native workers on account of want of familiarity with the work of foreign observers. In 1864, the year before Sir Samuel Wilks made Hodgkin's name immortal by attaching his name to the disease, Virchow described the large multinuclear or "lymphadenoma cells" which subsequent observers, among them Langerhans (1872) and C. Sternberg (1898), also noted, so that the cells are sometimes called after these later pathologists.

In 1878, in the course of a debate on lymphadenoma and allied conditions, W. S. Greenfield described "a large number of multinuclear cells containing from 4 to 8 or 12 nuclei," with a drawing which, though quite forgotten, was recognised in 1902 by Butlin as quite characteristic; though he never published any further account, Greenfield had fully worked out the histological appearances and had been accustomed to give them in detail to his Edinburgh students (S. MacDonald). In 1892 Goldmann pointed out the local eosinophilia in lymphadenomatous glands. But the characteristic microscopic appearances of lymphadenoma were not generally recognised until F. W. Andrewes gave a full account of the histological appearances independently of and practically synchronously with Dorothy Reed's similar description.

NATURE OF HODGKIN'S LYMPHOGRANULOMA.

Four views as to the nature of Hodgkin's lymphogranuloma may be mentioned—namely, that it is (1) an atypical form of tuberculosis, (2) a specific infective granuloma of unknown nature, (3) a new growth, and (4) a transition between a granuloma and a new growth.

(1) *The relationship of lymphadenoma and tuberculosis* has long been discussed. Some of Hodgkin's original cases were almost certainly tuberculous, and even now to the naked eye the large-celled tuberculous hyperplasia of the lymphatic glands is often indistinguishable from lymphadenoma. In 1898 Carl Sternberg, of Vienna, considered that lymphadenoma was a special form of tuberculosis, just as lupus is of cutaneous tuberculosis, and hyperplastic tuberculosis of the cæcum and appendix a peculiar form of intestinal tuberculosis; he obtained evidence of tuberculosis in 10 out of 15 cases; but this was opposed on the ground, dimly foreshadowed by W. H. Dickinson in 1878, that the tuberculous invasion was a secondary process which the existing lymphadenomatous lesion favoured. Inoculation experiments were found to give varying results, sometimes positive, sometimes negative (Andrewes; Reed; Longcope), and it appears that the positive results were due to a mixed infection, and the negative to uncomplicated lymphogranuloma. This interpretation seems convincing, but it has not been accepted universally; Ewing, with the weight of special experience, considers the evidence in favour of tuberculosis somewhat formidable.

In 1910 Fraenkel and Much, using the antiformin method, described a granular form of the tubercle bacillus which they found in 11 out of 12 lymphadenomatous glands free from the structural changes characteristic of tuberculous adenitis, and considered that in addition to this organism some special constitutional anomaly was necessary to account for the lesions. Dr. Negri and Mieremet, in 1913, described a similar organism, and in 1923 Fraenkel and Much, employing a special technique, found their form of the tubercle bacillus in nearly all the cases they examined. Almost simultaneously Kuczynski and Hauck described a mycelial form in the multinuclear cells, an observation

which appeared to fit in with the tuberculous origin, but this has not been confirmed by Sternberg. In 1924 Grumbach obtained a bacillus resembling Fraenkel and Much's by blood culture from a patient with the relapsing fever of Pel-Ebstein. Lukes and Jelinek, however, found Much's granules in three out of 11 persons without either tuberculosis or Hodgkin's lymphogranuloma.

It has been urged in favour of the tuberculous nature of Hodgkin's disease that the cases may terminate in generalised tuberculosis; this had not been common in my experience, but its occurrence might be explained by the view that the presence of Hodgkin's lymphogranuloma favours tuberculous infection or activates it when latent.

(2) *A Specific Infection.*—Various organisms have been described as responsible for Hodgkin's lymphogranuloma, but none of them can be regarded as proved. The most attractive is a protozoal (Löwit) or spirochætal (White and Proescher) origin on account of the eosinophilia in the glands, the occasional hæmic eosinophilia, and the well-marked reaction, in the early stages at least, to arsenic. Dreschfeld, in 1892, and Delbet, in 1895, described a bacillus, as did Ford Robertson and Young, in a case reported by Byrom Bramwell. But the most persistent effort in this direction is that of Bunting and Yates, who found a Gram-positive pleomorphic diphtheroid bacillus which Bunting states can be found in every case and by experimental inoculation made to produce the early histological changes seen in man; but the last two statements have not been confirmed.

(3) The view that Hodgkin's lymphogranuloma is a new growth, allied to sarcoma or endothelioma, is probably derived from the impression that this follows from its extension beyond the limits of lymphoid tissues and its infiltration of tissues, such as muscle and bone, which do not contain any lymphadenoid tissue; but in this extension there is nothing incompatible with the behaviour of the infective granulomas, tuberculosis, syphilis, and actinomycosis. On the other hand, Gye and Barnard's discovery of an ultramicroscopic virus and a specific factor for new growths, and the existence of infective sarcomas make discussion of the pros and cons of the neoplastic nature of Hodgkin's lymphogranuloma rather an academic exercise than one of practical utility.

(4) The compromise that Hodgkin's disease is a transition between an inflammatory formation and a neoplasm and shares characters with both of these processes has been supported by Symmers,[84] who classes it with mycosis fungoides, Cohnheim's pseudoleukæmia, Sternberg's leukosarcoma, and Gaucher's disease. This view is expressed in Dietrich's title granuloma-like sarcoma of lymphatic glands, and by "granulation tissue tumour."

It has been stated by Symmers [83] that Hodgkin's lymphogranuloma is a systemic disease which simultaneously attacks the lymphadenoid tissues widely in the body. In the light of ordinary clinical experience this pathological conception can only pass muster if it be assumed that the simultaneous involvement remains latent in many parts while it advances in one focus.

As the cause of Hodgkin's lymphogranuloma has not been established it is premature to divide it into different forms on the analogy of enteric fever which includes infections with *B. typhosus*, *paratyphoid* A, and *paratyphoid* B. But it is tempting to imagine that there are several allied forms of a disease characterised by much the same histological appearances but differing in their virulence, in their tendency to sarcomatous transformation, and so in their clinical manifestations. Symmers [84] definitely describes two forms of the disease, one confined to the lymphadenoid tissues, the other mechanically infiltrating other structures, skeletal muscles, blood-vessels, and so forth. The differences in the histological pictures as regards the presence of eosinophile cells and the puzzling variations in the blood picture are at least compatible with this view. But, on the other hand, the factor of the resistance of the individual's body must, of course, be taken into account in explaining the differences in the course and manifestations of this as of other diseases.

NATURE OF MALIGNANCY IN HODGKIN'S LYMPHOGRANULOMA.

That Hodgkin's lymphogranuloma is malignant in the sense that it leads to death is undoubted, and it differs from tuberculosis, which in many respects it closely resembles, in being constantly fatal and not becoming obsolete.

It generalises like tuberculosis, and may appear in situations such as the liver and kidney, where the amount of lymphoid tissue is small, and in muscle (vide Figs. 1 and 2) in which there is none. But mere generalisation is in keeping with the characters of an infective granuloma. Even if it be held that true Hodgkin's disease is confined to lymphadenoid tissue, the occurrence of lymphogranulomatous masses in the liver and kidneys might be explained on the hypothesis that there is a compensatory hyperplasia of the lymphoid tissue around the vessels, and that subsequently this becomes infected with the virus of the granuloma (Longcope). But further evidence suggesting malignant characters, such as invasion of adjacent bone and the histological characters of sarcoma, described years ago by Yamasaki and by Karsner, are now established, and Ewing considers this transformation into sarcoma ("Hodgkin's sarcoma") as a tumour *sui generis* and as by no means rare. He describes the new cells as endothelial in origin, but losing this character and appearing as large round cells, so that the term endothelioma is hardly applicable. Such a transformation as the result of long-continued irritation is, of course, well recognised, and Ewing[20] has described it in lymphatic glands affected with chronic granulomatous infection. The occurrence of Hodgkin's sarcoma as a late result of Hodgkin's lymphogranuloma is rather remarkable, as it is very seldom recognised in the other infective granulomas.

The development of sarcoma in Hodgkin's lymphogranuloma might be explained in one of two ways: (1) that some of the constituent cells of the lymphogranuloma proliferate so vigorously as to become a sarcoma, or (2) that the tissues surrounding a mass of lymphogranuloma are excited by the chronic irritation to a proliferation which eventually becomes sarcoma; this process Ewing compared with the occurrence of cutaneous squamous-celled carcinoma in the site of lupus.

Prof. H. M. Turnbull, while fully recognising the existence of the condition which Ewing [21] terms Hodgkin's sarcoma, regards it as the "lymphosarcomatoid" form of Hodgkin's lymphogranuloma and as inflammatory rather than neoplastic. Lymphosarcoma—the form of growth concerned in the malignant transformation of Hodgkin's disease—he considers as closely allied to it, and like it an inflammatory and not a neoplasm.

The Blood.

As the bone marrow, lymphatic glands, spleen, liver, and the reticulo-endothelial system regulate the formation and destruction of the blood-cells, it is obvious that, as these organs are the chief sites of Hodgkin's lymphogranuloma, the blood counts should be correspondingly affected.

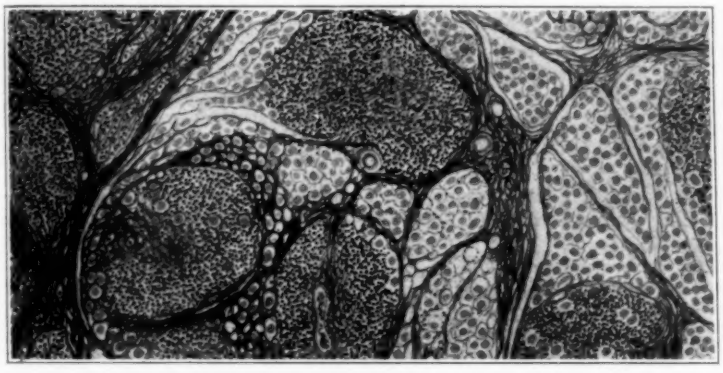
If the lesion was one of the reticulo-endothelial system in particular and at times affected these phagocytic cells to the exclusion of the others, it might be expected that in the early stages of proliferation there would be increased hæmolysis, later followed, as the result of destruction and fibrosis, by a diminished hæmolysis with a rise in the red blood count and even a polycythæmia; but, unless the early increase in the platelets described by Bunting be regarded in the light of a hæmolytic process, and not as evidence of marrow stimulation, nothing of this kind occurs, even in the few instances of the splenic form of Hodgkin's lymphogranuloma. On the other hand, this last argument is not supported by the blood picture in fibrotic conditions of the spleen, such as chronic splenic anæmia in which polycythæmia is not seen; and there are only most exceptional instances of massive tuberculosis of the spleen in which it has been recorded (vide Weber [93]). Sooner or later there is a secondary anæmia which eventually may become

so grave as to demand transfusion. How far in individual cases this is due to one or more of several causes it is difficult to say; toxæmia, infiltration of the erythroblastic bone-marrow, exhaustion after compensatory or arsenical stimulation of the bone-marrow, or the long-continued treatment by X ray exposures may each play a part.

The white count does not show any constant or characteristic change. Usually leucocytosis is absent and there may be a leucopenia with a relative lymphocyte increase, especially, I believe, when the spleen is predominantly affected, a view shared by Weber.[93] Bunting described the blood picture in two stages: in cases under a year's duration, no leucocytosis, a relative lymphocytosis, diminished eosinophiles, and increase in the transitional cells. In more advanced cases when the disease is spreading widely there is a leucocytosis with a raised polymorphonuclear count (75–90), and later from exhaustion of the bone-marrow absence of blood platelets. Stewart lays most diagnostic reliance on a relative increase of large mononuclear cells—not lymphocytes—especially of the transitional type (19–33 per cent.); and also attaches importance to an absolute and relative neutrophile leucocytosis and to a relative and absolute eosinophilia. The rather exceptional occurrence of eosinophilia, which is specially seen in the rare acute cases, is interesting in connexion with the characteristic though not absolutely constant presence of eosinophile cells in the glands. These cells are probably not produced locally, but are embolic immigrations from the bone-marrow (Goldmann; D. Reed; Symmers [84]; Turnbull). In a case of acute lymphadenoma Lincoln found 68 per cent. of eosinophiles and in his collection of previously recorded cases found that the highest count was 24·5 per cent. A percentage of 88 eosinophiles in a differential count of 83,000 leucocytes was recorded by Desjardins and Ford. Among 20 cases of the disease Pepper found it in 4 or 5 per cent. The relation of eosinophilia to pruritus has attracted much attention; the almost constant relation has been insisted on by Favre and Mariani, and the former drew an analogy between adénie éosinophilique prurigène and hydatid pruritus. No doubt eosinophilia and pruritus may be associated in lymphadenoma, but they may also occur independently. In a case without pruritus seen in 1910 there was 26 per cent. of eosinophiles, and in an advanced case under Dr. E. Bellingham Smith in St. George's Hospital the count was 69 per cent., but pruritus was then absent, though present at an earlier stage when the eosinophile percentage was 39. Megacaryocytes on their way from the bone-marrow to form the "lymphadenoma cells" in the lymphatic glands have been found in the blood-stream (Symmers [84]).

It would be interesting to correlate the blood picture with the contemporary changes in the structure of the lymphatic glands. But the complicated cellular changes in the lymphogranulomatous tissue and the variations in the blood picture make this a difficult problem. A lymphocytosis would correspond with a proliferation of the lymphoid cells; but that the leucopenia in the early stage would be more easily correlated with inhibition of the bone-marrow than with its destruction is rendered probable by the occurrence of a polymorphonuclear leucocytosis in the later generalisation of the disease.

FIG. 1.

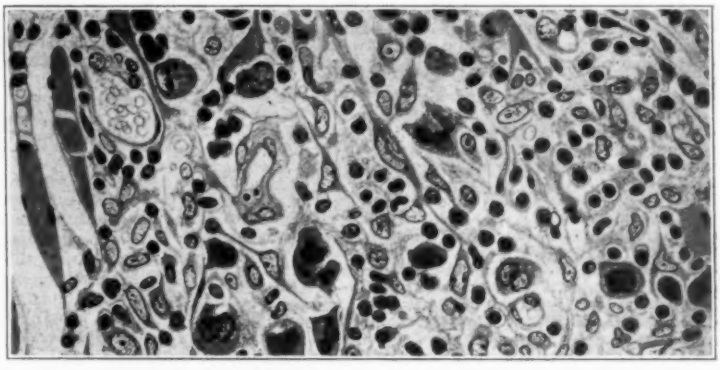


Iliacus muscle showing infiltration by Hodgkin's lymphogranuloma; small cellular and fibro-cellular nodules to the right of a larger more fibrotic nodule. Obj. 1 in., oc. Zeiss 4. (By the courtesy of Prof. H. M. Turnbull.)

The question whether lymphadenoma is primarily a proliferation of the lymphoid cells or of the reticulum has a bearing on the condition of the blood. If with Symmers [84] the primary change is regarded as a proliferation of the lymphoid cells, their escape into the blood and a lymphocytosis would be expected. Whereas if the first and essential change is proliferation of the endothelial cells and framework of lymphadenoid structures (Turnbull; Ewing; Webster), and proliferation of the lymphoid cells, when it occurs, a secondary process compensatory for destruction of lymphoid cells elsewhere (Longcope), the absence of any characteristic blood picture is more satisfactorily explained. Acceptance of the view that the process s primarily a proliferation of the endothelial and reticular cells (the distinction between them being difficult) has been followed by the suggestion that it is, like Gaucher's disease and xanthoma (Krumbhaar), a disease of the reticulo-endothelial system—a reticulo-endotheliosis (Piney); but if it were, the Kupffer's cells in the spleen and liver should be constantly and predominantly affected, and this is not the case.

In the past, when blood counts were less minute, leukæmia was stated sometimes to supervene on Hodgkin's disease. This sequence is not supported by modern evidence, but the discovery of leukæmic blood changes would probably rule out a previous diagnosis of Hodgkin's disease. There may well be an analogy between the two questions of (1) the occurrence of Hodgkin's sarcoma or lymphosarcoma (in Turnbull's interpretation), and (2) leukæmic or proliferative changes in the blood picture. That stimulation of the bone-marrow may occur in cases of widespread generalisation of Hodgkin's disease is shown by the occurrence of a polymorphonuclear

FIG. 2.



Iliacus muscle showing Hodgkin's lymphogranuloma. High magnification of a cellular nodule. Obj. ⅛ in., oc. Zeiss K 6. (By the courtesy of Prof. Turnbull.)

leucocytosis, and it is at least conceivable that riotous proliferation of the bone-marrow, analogous to sarcoma and leukæmia, might follow.

THE RELAPSING FEVER OF LYMPHADENOMA.

The *relapsing fever*, first recorded in 1870 by Murchison, but often called Pel-Ebstein after the descriptions by these two writers in 1885 and 1887, has attracted much attention, as shown by the papers of H. B. Shaw, F. Taylor, McNalty, Weber,[80] A. J. Hall and Douglas, and Galloway. Hall and Douglas estimate that less than 50 cases have been recorded; but it is probable that it is comparatively seldom reported rather than that it is as rare as is often stated, and Hall and Douglas appear to share this view, for they write, "in looking over old records of these cases it is surprising to find how many of them show a definite tendency to recurrent pyrexia." I am much indebted to Dr. A. S. MacNalty, who has given me the opportunity of seeing his notes of 11 cases additional to the 32 on which his paper in 1911 was based; among his new cases is one in a boy aged 3 years, the youngest on record. In a recent thesis for the M.B. degree at Cambridge, Mr. H. F. Brewer collected from St. Bartholomew's Hospital in four years, 1921–5, 62 (42 confirmed microscopically) cases of Hodgkin's lymphogranuloma, among which there were nine cases of relapsing fever.

This periodic fever is comparable with a protozoan infection such as malaria, relapsing fever, and rat-bite fever, but has a longer span of 15 to 25 or even 36 days (Hall and Douglas). Although bacteria have sometimes been obtained by blood cultures, negative results are the rule, and there is not any convincing evidence of a secondary infection, probable as it would seem. But some change must occur, otherwise every case of Hodgkin's lymphogranuloma would show the relapsing type of fever. Symmers's view that the fever is due to absorption from areas of focal necrosis, especially in the spleen, which he finds are always present in enormous numbers in the chronic relapsing fever, has much to recommend it, and had been present to my mind before I read his paper in which he compares the sequence of events with the fever in cases of necrotic hypernephromas.

Dr. MacNalty has generously put at my disposal an analysis of 40 collected cases of this relapsing fever; 30 were males and 10 females, and half the cases occurred between the ages of 10 and 30 years, the oldest being a woman of 54 and the youngest a boy aged 3 years. He divides the cases into three clinical groups, the first, far the commonest, in which the external glands are moderately enlarged and may become soft, tender, painful, and, but not constantly, enlarge during the pyrexial periods. In the second, a rare form, the glands, small in the apyrexial intervals, with the onset of fever rapidly swell up, becoming extremely large, tender, hot, and painful, the skin over them becoming red or purple and sometimes œdematous. With the end of the febrile attack the glands and spleen shrink to an extreme degree. In the third form, of which he collected eight cases, the only glands affected are the internal, though the spleen may be palpable. As regards the duration of the relapsing type the extremes were five weeks and five years, the disease being more rapid when the enlargement was confined to the deep glands. When the internal glands alone are affected the differential diagnosis, of course, covers a large field, such as enteric fever, malignant endocarditis, and other conditions which need not be discussed. But reference should be made to the simulation of the Pel-Ebstein fever by tuberculosis. Among 500 cases of pulmonary tuberculosis at the Brompton Hospital MacNalty found six with a recurrent fever; in such cases splenic enlargement may be a clue. He also insists on the close clinical resemblance to Hodgkin's disease of widespread tuberculous adenitis.

The *primary site of Hodgkin's lymphogranuloma* is a subject of some practical importance, for enlargement of the superficial lymphatic glands, being usually the first indication of lymphadenoma, has accordingly been generally regarded as the starting-point of the disease. But it does not follow that the glands first palpably enlarged are necessarily those first attacked. Symmers,[84] from pathological experience, contends that this conception is erroneous, and that primary enlargement of the abdominal or of the abdominal and thoracic glands combined is ten times commoner than primary enlargement of the cervical glands. With this Ewing [21] agrees, and adds that the enlarged superficial glands which first attract attention are merely the outlying portions of an internal lesion. The idea that the glandular enlargement on the neck may in any given case be secondary rather than primary, and, indeed, be analogous to the glandular metastases in malignant disease inside the chest and abdomen, should be more constantly in our minds, and, being based on post-mortem observations, demands clinical confirmation by systematic X ray examination of the chest in every early case; for if intrathoracic or abdominal involvement is present this should obviously be treated by deep radiation. The unsuspected existence of intrathoracic lymphogranuloma may help to explain some apparently hyperacute cases, such as Brunner's patient, a woman aged 27 years, who died with two weeks' symptoms suggesting acute cardiac failure, the necropsy revealing extensive Hodgkin's disease.

Enlargement of the superficial lymphatic glands may disappear under treatment, either entirely or partially, while insidious implication of the deep abdominal and thoracic glands progresses, and the patient becomes anæmic, emaciated, and eventually dies. Intercurrent infections, such as erysipelas, appendicitis, and lobar or influenzal pneumonia, may be followed by diminution in size or disappearance altogether of the glands which, however, subsequently reappear. The same temporary improvement, especially in the blood count, may occur in leukæmia, an event which is of interest in connexion with Symmers's [84] contention that Hodgkin's lymphogranuloma and myeloid leukæmia "are probably different quantitative responses to the same type of provocative agent." Further, this reaction is of interest in connexion with W. B. Coley's treatment of Hodgkin's lymphogranuloma by the mixed toxins of erysipelas and *Bacillus prodigiosus* and radium.

The variations in its distribution are on much the same plane as those in the infective granulomata, such as tuberculosis and syphilis, and it may be suggested that its localisation is determined by two factors: (1) the variations in the resistance of the different parts of the body, (2) the accident of a large dose of the virus at any one site. When generalisation occurs, the spleen is more often invaded than the liver, according to Longcope and McAlpine in the percentages of 57 and 48.

Intrathoracic Form.

The intrathoracic form is probably more frequent and primarily responsible for palpable glandular enlargement in the neck than is generally recognised. For a considerable time pressure symptoms may be absent, although a skiagram shows well-marked invasion of the mediastinum. The thymus may be predominantly affected and from this focus the disease may spread over the pericardium and even to the myocardium; fatal effusion into the pericardium may follow, and I have seen a chylous effusion. In 1924 Symmers collected five cases of predominant thymus localisation; but probably it is much more frequent than these figures would suggest, and the question arises what proportion of mediastinal sarcomas should be regarded as Hodgkin's sarcoma, for there seems to be a special tendency to sarcomatous change in these mediastinal lymphogranulomas (Ewing [21]). The bronchial glands are often enlarged and from them the disease may creep along the bronchi into the lungs. The first clinical manifestation may be acute pleurisy, and palpable enlargement of glands may follow later. Pleural effusion, which requires repeated tappings, is a feature of some cases. In one case the effusion caused sudden death, and in another it was chylous. In the presence of a comparatively small effusion the dyspnœa may be out of proportion to the amount of fluid; in some cases this is obviously due to pressure exerted by enlarged glands on the bronchi, as shown by stridor and skiagraphy. Symmers [84] has recorded two cases with remarkable thickening of the pleura with Hodgkin's lymphogranuloma. Pressure symptoms resulting from compression of the trachea, bronchi, veins, and

nerves make this the most distressing form of lymphadenoma, as the patient may eventually become strangled, deeply cyanotic, and terribly distressed. Before this stridor may be noticeable on exertion only; I have seen attacks of dyspnœa terminating in the expulsion of fibrinous cases. The fever of the Pel-Ebstein type may suggest pneumonia, and Weber considers that patients taking arsenic are prone to pneumonia, which, however, usually runs a favourable course

In Dr. C. H. Miller's case, from which the sections showing Hodgkin's disease in muscle were taken, there was a large mediastinal growth, involving the root of the right lung and causing racemous lymphogranulomatous bronchitis, peribronchitis, and peribronchial pneumonia, with catarrhal, fibrinous, and fibroblastic pneumonia in the intervening pulmonary tissue of the upper and middle lobes of the right lung (H. M. Turnbull). Paracentesis of the right pleura, giving exit to three pints of clear yellow fluid (97 per cent. lymphocytes) was followed by pneumothorax. Death was due to the intrathoracic condition.

Pressure on the superior vena cava and innominate veins may induce cyanosis, distension of veins, œdema of the face and conjunctivæ, and an œdematous boggy condition in the supraclavicular fossæ. Clubbing of the fingers (Turnbull) and chronic pulmonary osteo-arthropathy (Weber and Ledingham) have been reported. Dysphagia may occur, but is seldom prominent. Pressure on the recurrent laryngeal nerves may lead to abductor paralysis. The oculo-cardiac reflex may be exaggerated (Jacob).

ABDOMINAL MANIFESTATIONS.

The abdominal manifestations of Hodgkin's lymphogranuloma may be divided into (1) the peritoneal, (2) retroperitoneal, (3) gastro-intestinal, (4) splenic, (5) hepatic, and (6) renal forms. The last three are extremely rare in a predominant form.

(1) The *peritoneal form*, due to affection of the mesenteric glands, may imitate tuberculous peritonitis and give rise to ascites, which is usually serous, but in rare instances has been chylous or pseudo-chylous; among 46 cases Schreiner and Mattick had two with chylous ascites, and Schölberg and Wallis in their collections of 102 cases of chylous and 71 cases of pseudo-chylous found two in each group due to Hodgkin's disease. Ascites, which may be the first physical evidence of the disease, is occasionally associated with jaundice due to pressure on the bile-ducts by enlarged glands in the portal fissure. This jaundice may intermit; I have twice seen the jaundice appear and disappear with the periodic onset and resolution of the Pel-Ebstein fever. Enlargement of the glands in the neighbourhood of the liver and fever may imitate cholecystitis or hepatic abscess, as in a case I saw after laparotomy had revealed the true state of affairs.

(2) In the *retroperitoneal form* the glands may be involved alone or together with the mesenteric glands and the spleen, and from the greater enlargement of the retroperitoneal glands it may appear that the splenic enlargement is secondary. The special symptoms due to lymphadenomatous glands in the retroperitoneal space are those of pressure on adjacent structures, such as the inferior cava causing œdema of the feet and abdominal wall and albuminuria, on the bile-ducts causing jaundice, which in a case mentioned by MacDonald came on early in the course of the disease, on the spinal nerves causing pain, and on the sympathetic plexuses leading to dyspepsia, vomiting, and colic. Pressure exerted on the bowel has been associated with obstinate constipation; and periodic increase in the size of the glands, which may correspond with the bouts of fever, may account for attacks of pain in the back or the lower limbs. Pain associated with irregular fever and resistance in the upper abdomen suggested a leaking gastric ulcer, but at laparotomy the glands showed acute Hodgkin's disease (MacDonald).

The lymphogranulomatous change, when thus hidden at the back of the abdomen and impalpable, may be responsible for obscure fever, and when its character is that of the relapsing fever type the absence of enlarged glands does not justify the diagnostic exclusion of the disease (Horder[49]), but the diagnosis is very difficult, as shown in Whittington's case, in which an acute onset first suggested peritonitis, then appendicitis, enteric fever, splenic anæmia, tuberculous peritonitis, and obscure malignant disease.

Cutaneous pigmentation has been reported in association with a mass of lymphadenomatous glands around the adrenals (Nieczkowski; Fowler; B. Bramwell; Symmers), and may be due to irritation of the sympathetic or with less probability to interference with the adrenals. Lymphogranulomatous glands around the aorta may invade the dorsal vertebræ and pass through the intervertebral foramina into the spinal canal, and even lead to compression of the spinal cord and paraplegia. It is possible that some cases of herpes zoster are due to irritation of the ganglia on the posterior nerve-roots.

(3) *Gastro-intestinal lymphogranulomatosis* is a difficult subject; more cases were recorded in the days before the histological characters were established in 1902. Among Desjardins and Ford's 135 cases there was no instance of gastric or intestinal implication, but Prof. Turnbull found one case with extensive implication of the intestine among his 47 necropsies, and Steindl has recently reported nodular lymphadenoma of the gastric mucosa, the glands in the mesentery being the only other site involved. In 1904 Salaman denied that the alimentary canal was ever affected, and, indeed, that Hodgkin's disease is a pathological entity. Although it would be natural to expect that Peyer's patches and the solitary follicles would be affected, especially in cases in which the abdomen bears the brunt of the disease, and is presumably the portal of entry, this is evidently very rare now.

The cases formerly described as lymphadenoma of the stomach and intestines, such as Pitt's collection of 25 cases divided into two groups of (1) seven cases in which the lesion began in the mucous and submucous coats of the stomach and intestine and projected into the lumen, and (2) the 18 cases in which it spread from the mesenteric glands to form diffuse sheaths in the subserous coat, would now be regarded as allied to, if not examples of, infective lymphosarcoma, or lymphoblastoma, a tumour of lymphocytes, of which Graves has collected 249 examples of the intestine.

In addition to dyspepsia due to irritation of the sympathetic and abdominal distension caused by ascites and glandular enlargement, the effect of treatment by arsenic and irradiations must not be left out of account in considering the causation of gastro-intestinal symptoms. I have seen melæna six weeks after the application of radium to the abdomen, as if from a duodenal ulcer; McAlpine and von Glahn record perforation of the transverse colon in a woman aged 28 years, who had during six years been treated by X rays on 95 occasions; and Sir Thomas Horder allows me to mention a patient in whom perforation of the ileum occurred after two courses of X ray treatment to the abdomen.

(4) *Splenic form.*—The spleen is nearly always affected in cases which run their full course; Prof. Turnbull found the spleen invaded in all his 47 necropsies, and regards this as an important point in the diagnosis. Massive infiltration of the spleen by Hodgkin's lymphogranuloma with insignificant enlargement only of the lymphatic glands is infrequent, and it is very rare to find the disease entirely confined to the spleen.

Symmers described two cases; in the first[82] no glandular enlargement was detected in life, and the spleen showed the microscopic appearances of Hodgkin's lymphogranuloma, but there was no necropsy. In his second case[84] there were some palpable glands. In Wade's case no enlarged glands were detected clinically or at operation, but here again there was no necropsy. In Mellon's case there was slight enlargement of the inguinal glands. Cornwall reported a case without any disease in any glands. Dr. Krumbhaar has kindly sent me the notes of a necropsy showing lymphogranuloma of the spleen and bone-marrow, but not of the lymphatic glands. L'Esperance reported an enormous spleen, simulating a ventral hernia, with slight infection of the retroperitoneal, but not of the superficial lymphatic

glands; the liver also showed invasion. Although Donhauser regarded his case of splenomegaly with sclerosed bone-marrow as a compensatory hæmatopoietic process, some later writers (Ewing) have referred to it as the splenic form of Hodgkin's lymphogranuloma. Ewing also quotes a case recorded by Kummel. In several of these cases there has been a special tendency to relapsing fever.

In some other instances after enlargement of the superficial lymphatic glands has subsided or even disappeared the spleen and liver have enlarged, and at this late stage the condition has imitated chronic splenic anæmia or the further stage with secondary

FIG. 3.

Massive infiltration of the kidney by Hodgkin's lymphogranuloma. (By the courtesy of Dr. Carslaw and Prof. Muir.)

hepatic cirrhosis or Banti's disease. Poynton, Thursfield, and Paterson record a case of a boy at first with some enlargement of the cervical glands, which had disappeared at the necropsy when the spleen (25 oz.) and the liver (44 oz.) were both found to be invaded.

(5) *Hepatic form.*—The liver is affected in 50 or more per cent. of all cases of the disease, but usually this is a post-mortem, not a clinical, observation. Reference has been made to jaundice from pressure on the bile-ducts by the glands in the portal fissure, and to the possibility of mistaking an enlarged liver or apparent enlargement from glands in the neighbourhood when associated with relapsing fever for hepatic abscess. Limitation of Hodgkin's lymphogranuloma to the liver is unknown, but I have seen the organ greatly enlarged secondary to lymphadenomatous glands in the groin in one case, and at the elbow in another instance. Symmers[84] reported a case in which the liver was enormously and, except for the spleen and abdominal lymphatic glands, exclusively invaded.

(6) *The renal form.*—The kidneys occasionally show nodules of white lymphadenomatous growth, usually small in size, and in rare instances the perirenal lymphatic glands are much enlarged.

By the kindness of Prof. R. Muir and Dr. J. Carslaw, of Glasgow, I have been provided with the notes of a man, aged 26, with extensive lymphadenoma (vide Fig. 3) of the right kidney (17 oz.), which was studded throughout with whitish nodules of soft cellular tissue resembling to the naked eye secondary sarcoma, the largest being ¾ inch in diameter. The left kidney (3 oz.), apparently small congenitally, contained one or two nodules of the same growth. Microscopically the liver (47 oz.) showed diffuse lymphadenomatous infiltration of the portal canals, thus contrasting with massive invasion of the right kidney. The spleen (15 oz.) contained nodules and the retroperitoneal glands were markedly involved. The bodies of the first four dorsal vertebræ and the dura mater were invaded, and the spinal cord softened; before death the patient had become paraplegic.

Apart from a trace of albumin clinical manifestations associated with renal invasion have not attracted attention, but J. Galloway recorded the case of a man with polyuria and a protein resembling in some respects, but differing in others from, Bence-Jones's protein. The kidneys contained cysts and microscopically showed small areas of lymphadenoma.

CUTANEOUS MANIFESTATIONS.

The cutaneous manifestations of Hodgkin's lymphogranuloma are of various kinds, and raise some questions of interest. It has been estimated that 25 (Ziegler) to 39 (Cole) per cent. of the cases exhibit them in one form or another.

Pigmentation may be due to the local action of X rays, the administration of arsenic, the scratching induced by pruritus, or to nerve irritation by affected retroperitoneal glands, or possibly to adrenal disorder. Symmers's patient with acanthosis nigricans had lymphogranulomatous invasion of the cœliac plexus without any implication of the adrenals. The pigmentation may suggest Addison's disease.

The *hair* may become altered in colour; in Byrom Bramwell's patient it became lighter, finer, and more silky. Pruritus and itching may lead to perifollicular inflammation and loss of hair, but in Porter's account of a patient with almost universal alopecia no mention was made of pruritus.

Perspiration may naturally accompany the swinging temperature in the Pel-Ebstein syndrome, but it may also be associated with pruritus. The parchment-like condition due to continued scratching has been noted to cause diminution in the sweat. (Nanta and Baubru.)

Œdema of the skin may be mechanical; areas of atrophy may depend on impaired nutrition, and in rare instances hæmorrhages have been recorded; it is tempting to associate recurrent purpura, as in Weber's[94] case, with the diminution in the platelet count known to occur in the later stages; but I do not know that thrombocytopenia has been found in purpura in Hodgkin's disease.

Ætiologically the cutaneous manifestations fall into two groups, (1) the toxic, and (2) those due to invasion of the skin by the lymphogranulomatous tissue characteristic of Hodgkin's disease.

The reported incidence of *pruritus* varies; Favre considers it constant, but apparently it is a diagnostic factor of his adénie éosinophilique prurigène; his pupil Colrat found it in 11 out of 13 cases, and no doubt inquiry from the patient would increase the number of recorded instances. In Longcope's 86 histologically proved cases it was noted in 3 only; Desjardins and Ford found it in 9 per cent. of 135 similarly established cases. It is the commonest of the skin manifestations and is responsible for the next most frequent, namely, prurigo. When present it is usually an early symptom, often months before there is any glandular enlargement, and so may be regarded as scabies or analogous to the premycotic stage dermatosis of mycosis fungoides (Weber and Dove), and herein a clinical resemblance of these two conditions may be shown.

It may, however, occur after the diagnosis has become clear from the ordinary clinical picture, and then come and go, or in rare instances appear only in the terminal stage. It may be excited by stimulation of the skin by changes of temperature, X rays, or arsenic (Galloway). Its pathogeny leaves room for much speculation; on analogy it has been regarded as anaphylactic or to be toxic. Though irritation of the terminations of the sensory cerebro-spinal nerves would appear an obvious explanation, it has been regarded as due to spinal radiculitis (Milian and Blum) and analogous to tabetic pruritus, and even to irritation of the sympathetic (Golay). The easy explanation that pruritus may be toxic, does not perhaps carry great weight in the light of the inconstancy of its incidence and its occasional appearance long before there are any palpably enlarged glands. But it may be that deep-seated lymphadenomatous glands provide the pruritogenic poison long before the more outlying and superficial glands are affected. The occasional occurrence of amyloid disease in Hodgkin's lymphogranuloma, of which Fabian collected 22 examples, points to the action of a powerful toxin, but there is no reason to believe that the occurrence of amyloidosis and pruritus are associated. Abnormal sensitiveness of the nervous system might be thought to play a part in the occurrence of pruritus, and Galloway's observation that arsenic, which is a nerve tonic, sometimes excites pruritus, might be mentioned to support the view that an inherent or acquired susceptibility of the central nervous system plays a part.

Pruritus is far commoner in Hodgkin's lymphogranuloma than in leukæmia, in which it is generally stated to occur. I have never seen it, and of 12 recorded examples of leukæmic pruritus it is noteworthy that 6 are cases of universal leukæmia of the skin collected by Ketron and Gay. It would be interesting to correlate the incidence of pruritus with the structural changes in the two conditions, especially whether the presence of small areas of necrosis, which are common in Hodgkin's lymphogranuloma, account by a resulting anaphylactic mechanism for the pruritus. The pruriginous papules are small-celled collections, and would appear to be purely inflammatory, and so to be distinct from lymphadenomatous invasion of the skin; but this differentiation may be far from easy in the early stage of the latter. Difficulty may also arise in distinguishing these pruriginous papules from the cutaneous infiltrations in aleukæmic leukæmia.

Among other cutaneous manifestations presumably of a toxic nature are eruptions of an erythematous, morbilliform (Webster), urticarial (MacNalty), bullous character, and universal exfoliative dermatitis. The occurrence of these different forms may perhaps be explained by differences in the resistance and susceptibility of the skin.

Infiltration of the skin by Hodgkin's lymphogranuloma, apart from extension from immediately underlying lymphadenomatous glands, is much rarer than the skin changes of prurigo. In 1924 I could collect 12 cases only. It thus contrasts with mycosis fungoides, which, indeed, has been thought by Ranvier (1869) and K. Ziegler (1911) to be the cutaneous form of Hodgkin's disease, a view difficult to harmonise with the histological appearances. The cutaneous tumours in Hodgkin's lymphogranuloma may be small or large and flat; they grow slowly and seldom, as in Langley and Cole's cases, ulcerate. As a rule, the presence of the tumours has not been associated with pruritus. As they are usually part of the generalisation of the disease they are a late phenomenon in its course.

HERPES ZOSTER.

Herpes zoster is probably more frequent in lymphadenoma than in any other disease, though it is not at all common. The questions arise, is it always due to arsenical treatment, does arsenic only render the patient more susceptible to the responsible virus, or may it in some instances be due to irritation of the posterior root ganglia by enlarged glands close to the spine? Weber's conclusion that patients taking arsenic are disposed to acute pneumonia, which is so often associated with febrile herpes labialis, is perhaps of interest in this connexion. Weber [93] has never seen herpes in Hodgkin's lymphogranuloma apart from arsenical treatment; but this has probably occurred in some recorded instances (O'Flynn; Pancoast and Pendergrass). It may appear early or late in the course of the disease, and may even recur; in a boy seen in consultation there had been three attacks. I have seen it generalise like varicella. The scars left by an attack of herpes may show up as leucodermic patches against the skin of the trunk rendered pigmented by arsenical treatment.

SYNOVITIS.

Very little attention has been paid to arthritic manifestations in Hodgkin's lymphogranuloma, and no doubt they are rare. From the two cases I have seen they would appear to be transient and not well marked.

In a man in St. George's Hospital with generalised lymphogranuloma there was œdema of the left thigh and leg from pressure and at one time evidence of considerable effusion into the corresponding knee-joint, but this had disappeared at the necropsy. A boy, aged 11 years, seen in consultation in 1923, had recurrent attacks of synovitis with considerable effusion in the left wrist and elbow, knee and ankle, and right temporomaxillary joint, followed by darkening of the skin suggesting hæmorrhage. Some of the attacks were febrile, others afebrile; they subsided spontaneously; as salicylates were employed in one attack only and the heart was normal, there was no reason to regard them as rheumatic. It may be noted that he also had three attacks of zona on the right side of the chest, pruritus, and a rash. The question arises whether toxæmia due to liberation of a protein from X ray exposures, which had been freely employed, were responsible for the synovitis.

As Hodgkin's lymphogranuloma appears to invade the bone-marrow in about half the cases, it might, on the analogy of tuberculosis, have been expected that the joints would be prone to invasion. On the other hand, it may be pointed out that myeloid leukæmia, which, according to Symmers,[84] is fundamentally related to Hodgkin's disease, does not cause arthritic manifestations.

SKELETAL INVASION.

Lymphadenoma in bone was described by Weber [88] some years before the histological features of lymphadenoma were established; his case would appear to be one of multiple myeloma. Invasion of bone by lymphadenoma is now generally recognised.

Among 14 cases Symmers found it in seven, or 50 per cent., and describes two changes which may be present at the same time, (*a*) hyperplastic compensation in response to demand for more blood corpuscles, which he regards as identical with that in chronic myeloid leukæmia, and (*b*) invasion by lymphogranulomatous tissue. Among 39 necropsies at the London Hospital Prof. Turnbull found the bone-marrow invaded in 19, or 49 per cent., the femur and the lumbar vertebræ being the parts of the skeleton most often affected; from comparison of the sites of the glandular groups most enlarged, and therefore presumably primarily affected, on the one hand, and the bones affected on the other hand, he obtained results which suggest that the femur is invaded through the blood-stream, and that the lumbar vertebræ are involved as a result of direct spread from the retroperitoneal glands.

On the question whether the changes in the bone-marrow are part of a widespread reaction to the stimulus of the unknown virus or whether they are secondary, in the same way as generalised tuberculosis is, to infection from a primary focus, there may be room for discussion. Prof. Turnbull concludes that they are secondary. It is noteworthy that spontaneous fracture of bones, which may occur in secondary carcinoma and in endosteal sarcoma, is not known in invasion of bone by Hodgkin's lymphogranuloma. Bence-Jones's proteinuria, which is a feature of multiple myeloma, appears to have been recorded in one case only of Hodgkin's disease (Galloway).

PARAPLEGIA.

In rare cases paraplegia occurs in the course of Hodgkin's disease; Weber[92] refers to 12 examples, in six of which a necropsy was performed. The paraplegia may apparently be due to: (1) Pressure on the spinal cord by lymphogranulomatous growth gaining entrance into the vertebral canal either through the intervertebral foramina or from the infiltrated vertebræ; this form of pressure paraplegia appears to have occurred in five of Weber's cases. These cases would probably be those with retroperitoneal localisation of the disease, in which sarcomatous change has supervened. (2) Pressure on the nerve roots; in a case of W. Hale-White[92] this was exerted inside the vertebral canal. (3) Myelitis and acute meningitis without any evidence that the spine or dura mater had been invaded by the lymphogranuloma (Allan and Blacklock); in view of the rarity of paraplegia in Hodgkin's disease the myelitis may well have been independent of that disease except in so far as it reduced the patient's power of resistance and so favoured the infective cause of the lesion in the central nervous system. (4) It would be natural to expect that arsenical neuritis might be responsible for paraplegia; I have seen one case, recorded by Carlill, which might bear this interpretation.

DIAGNOSIS.

The distinction from other forms of glandular enlargement, tuberculous, leukæmic, chronic inflammatory, and sarcomatous, and from other pyrexial states would, if systematically considered, occupy much space, and a few points only will be touched on.

The Value and Fallacies of Biopsies.—From the difficulties of clinical diagnosis a dogmatic opinion is uncertain and often unwise until a gland has been removed and found to show the characteristic histological changes. Unfortunately a gland excised from a case of Hodgkin's lymphogranuloma does not always show the lesions; its enlargement may be due to simple non-specific inflammation or to compensatory hyperplasia. According to Prof. Turnbull the histological changes are best seen in glands which are very hard and from contraction not necessarily enlarged, and not very infrequently the microscopical report cannot go further than "lymphogranuloma, possibly Hodgkin's, but histological characters are not definite." In contrasting the value of microscopic examination of excised glands Webster found that it gave much more correct diagnostic results in Hodgkin's lymphogranuloma than in cases finally shown to be lymphosarcoma.

Diagnosis from Sarcomatous Lymphomas.—The greatest difficulty is the clinical differentiation of Hodgkin's lymphogranuloma from lymphosarcoma and the closely allied malignant lymphocytoma composed of small lymphocytes, and from endothelial sarcoma. I have seen cases apparently running the clinical course of Hodgkin's lymphogranuloma show these histological appearances finally; the question arises whether, as probably most would consider, these conditions have existed from the start, or whether they have supervened as the result of Hodgkin's lymphogranuloma. Is there any evidence of this change, such as a biopsy early in the course of the disease showing the appearances of Hodgkin's disease, and later a necropsy proving the sarcomatous nature? It does not appear to me that the therapeutic test of X ray exposures helps in distinguishing them. I have personal knowledge of what appeared to be Hodgkin's disease, but turned out to be malignant lymphocytoma reacting in a wonderful manner, life being prolonged for three years after an early termination seemed inevitable, to Dr. W. B. Coley's personal treatment by the mixed toxins of erysipelas and *Bacillus prodigiosus* and massive doses of radium.

Undetermined forms of glandular enlargement, such as those spoken of as infectious mononucleosis and glandular fever, may, though of comparatively short duration, give rise to difficulty in diagnosis. Infectious mononucleosis according to Sprunt and Evans presents a slight leucocytosis with some increase in the large mononuclear-transitional cells and many pathological lymphoid forms.

Cases of aleukæmic leukæmia—namely, leukæmia in an aleukæmic phase, and cases which come under Bunting's heading of lymphoblastic aleukæmia, can hardly be differentiated from Hodgkin's disease except by histological examination of an affected gland.

Under the heading of *splenomegalia lymphatica hyperplastica* Brill, Baehr, and Rosenthal describe a generalised lymph follicle hyperplasia of the lymphatic glands and the spleen with a normal blood count and readily curable by X rays. The spleen is enormously enlarged and shows giant Malpighian bodies the size of a barley grain ¼ in. in diameter, and almost entirely composed of endothelioid or reticular cells. The follicles of the lymphatic glands are greatly enlarged due to cells of an endothelioid or reticular type, like those seen in the germinal centres of lymph follicles, especially in children. The appearance is said to be quite different from that of ordinary follicular hypertrophy and of lymphatism. Before the curative effect of X rays was found out, splenectomy was performed in two out of three cases recorded; in one it weighed 56 oz. (1800 g.). The cause of this condition was not determined, whether from toxic influence within or without the body; they quote Kusczinski as having produced generalised lymphoid hyperplasia in mice by special diets. How often cases of this kind come to hospital, and after being diagnosed as Hodgkin's lymphogranuloma are treated with X rays and arsenic and are then lost sight of it is impossible to say; a case of general hyperplasia of all the lymphoid tissues except the thymus with a leucocyte count of 23,235 (polymorphonuclears 82 per cent.) was reported by C. H. Miller.

I have twice seen a symptom-group which may imitate lymphadenoma—namely, a "hypernephroma" of the left kidney or adrenal body producing a tumour imitating splenomegaly and glandular metastases above the left clavicle; from the fever described in necrotic hypernephromas (Symmers[84]) the resemblance might be increased.

PROGNOSIS AND TREATMENT.

The universal fatality of this disease, which in other respects has many resemblances to tuberculosis, may perhaps be correlated with the much less marked tendency of the lesions to undergo necrosis and fibrosis, as if the unknown cause were more persistent, though not necessarily more virulent, and the resisting powers of the body less able to bring the disease to an end. The absence of extensive necrosis and of caseation might suggest that the process is less acutely virulent.

The duration of symptoms varies; acute cases lasting a few weeks are rare, and the suspicion may arise that from the presence of internal glandular disease they are not so acute as the duration of obvious signs, due to generalisation, would suggest. When the primary site is in the thorax or abdomen and extension later occurs to superficial glands, the course may, when calculated from their detection, be very short; the primary enlargement, especially in the chest, may, owing to the adaptability of the viscera, remain latent for a long time and be detected by skiagraphy only.

Prognosis as to duration of life depends on treatment by arsenical preparations and irradiations, for there is not any evidence that, as in tuberculosis, a spontaneous cure occurs. The effect of arsenical preparations is at first most successful; but relapses occur, and eventually the drug fails to control the disease, as if the unknown virus became arsenic-fast or the morbid process underwent some change. The same appears to be true with regard to the radiations of X rays and radium; but in most exceptional instances this does not hold good; Schniffner recorded the case of a woman who for 11 years was benefited by X rays. It has even been suggested that X rays may lead to generalisation of the disease (Weber[93]), just as it has sometimes appeared to do in carcinoma. Simmonds and Benet prefer radium to X ray treatment, and urge that it should be applied on all the lymphatic areas in the body and not only on those obviously affected.

Vaccines of the diphtheroid organism have not proved successful, but Bunting mentions trials with an immune serum (to this organism). Success has attended the treatment, by Dr. W. B. Coley, of New York, of Hodgkin's disease by repeated injections of the mixed toxins of erysipelas and *Bacillus prodigiosus* and of massive doses of radium; of this I have had much recent information from him.

Surgical opinion has long been adverse to removal of lymphadenomatous glands on account of the difficulty of complete extirpation and of the frequency of similar intrathoracic disease. Symmers [84] throws out a warning of the danger of secondary infection as a result of excision of the inguinal glands. Removal of infective foci, such as the tonsils, and free surgical extirpation of the disease in an early stage has been advocated by Bunting and Yates on the lines of the Halstead and Crile operations for the lymphatic glands in mammary carcinoma. But the cases are not necessarily analogous, for the primary growth in the mamma is removed, whereas in lymphadenomatous glands in the supraclavicular fossæ and neck the thorax or abdomen may be the primary focus.

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BIRMINGHAM HOSPITAL SATURDAY FUND.—This fund has just distributed £25,000 from this year's collection to the voluntary hospitals and nursing societies of the city. The grant to the General Hospital amounts to £7500; to the Queen's Hospital, £5650; to the Children's Hospital, £2100; to the General Dispensary, £1750; and to the Women's Hospital, £1600.

WESTERN OPHTHALMIC HOSPITAL.—It is reported that the condition of this hospital, which is situated in the Marylebone-road, is growing steadily worse. It is housed in an old building known to date back more than a century and a half, which, notwithstanding struts and tie-rods, continues to crack, and occasionally a ceiling falls. The house, moreover, is extremely crowded and inconvenient. The staircase from the men's ward to the operating theatre is so "narrow, rickety, and crooked" that an ambulance cannot be taken up or down, and patients have to climb the stairs; upon occasion operations upon men have to be performed on a screened bed in the women's ward. The pathological laboratory is a small underground apartment, and there is only one bathroom for women patients, nurses, maids, and matron. A new building will cost £40,000, towards which £14,000 has been accumulated. As regards current expenditure the hospital pays its way.

An Address

ON THE

CASE FOR THE UNBORN CHILD.

Being the David Lloyd Roberts Lecture delivered at St. Mary's Hospital, Manchester, on Nov. 17th, 1925,

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(*Concluded from p. 1158.*)

THE EFFECTS OF ALCOHOL ON THE FŒTUS.

I DO not wish to raise the vexed question as to whether or not alcohol is really a dietetic substance. There are, however, some considerations in regard to it which cannot be ignored in any review of the possible effects of maternal diet on the fœtus. There is a very ancient belief that children begotten during drunkenness are liable to be deformed. This belief found its expression in pagan mythology, for Vulcan, the deformed son of Jupiter and Juno, was begotten when both parents were intoxicated; his deformed condition so angered his mother that she cast him into the volcano, where he laboured for ever at the forges of the gods. The tradition has survived, and, unlike the great majority of such myths, it appears to have a very good chance of being eventually established as a scientific fact. Already, in the opinion of several authorities, the point has been proved as nearly as such a point ever can be proved by clinical observation.

In considering the effects of alcohol, the first point to bear in mind is its great diffusibility. It becomes rapidly absorbed directly from the stomach and soon becomes equally diffused throughout the fluid and solid tissues of the body. It passes readily through the placenta and can be detected in the umbilical blood. Further, though readily diffusible, alcohol is not quickly eliminated; strictly speaking it is not eliminated at all, but gradually destroyed by oxidation in the tissues of the body. Mellanby showed that after only a small dose of alcohol had been drunk it could be detected in the blood for 19 hours. I do not think it can be disputed that alcohol drunk by the mother will pass into the fœtal circulation, that it will be present at any given moment in approximately the same degree of concentration in both mother and child, and that the child will be subjected to its influence for a comparatively long time, owing to the tardiness of its disappearance from the tissues.

It would not be right to deduce from this that a pregnant woman who takes alcohol as a beverage is thereby doing harm to her child. Physiologists are still uncertain whether it can truly be said that the action of occasional doses of alcohol is in any degree deleterious. They are unanimous that the frequent taking of alcohol, so that the tissues never get the chance of completely freeing themselves from it, is harmful in certain definite respects. But if the dose is not too closely repeated, so that the first is disposed of before the second is taken, the tissues can completely recover from its effects and suffer no harm. The habit of frequent "nipping" during pregnancy cannot fail to bring the fœtal organ and tissues under the sustained influence of alcohol, from which they never get the chance of freeing themselves by completely oxidising it.

It is notorious that a very high infant mortality occurs among the children of alcoholic parents. This is in great part due to the unfavourable home conditions under which these children are reared; poverty, neglect, bad feeding, and insanitary surroundings all tend to swell the number of deaths in infancy. It is, however, probable that the children of alcoholic parents are handicapped from the start by birth deficiency in respect of vigour and of powers of resistance. It is notorious that the chronic alcoholic adult is not a "good subject" either for surgical operation or for acute illness. If the child of a chronic alcoholic mother has been subjected to the constant influence of alcohol throughout the whole period of intra-uterine development, it is hardly conceivable that it can escape without some degree of damage.

Up to this point what has been said had reference mainly to the alcoholic mother and the injury she may do to the child she is carrying. There is, however, a further aspect of the matter to which attention should be drawn. A good deal of experimental work has been done in recent years to determine the effect upon their offspring of subjecting animals, both male and female, before mating, to the effects of the fumes of alcohol, continued for a long period. As so often happens, the results obtained with different animals are widely divergent. Pearl,[14] an American observer, worked with fowls, subjecting them to the fumes of alcohol before laying, and also their eggs to the same fumes during incubation. In order to save time and avoid confusion I shall not quote his results, for the reason that reproduction in birds (oviparous) is so widely different from that which obtains in man, that the greatest caution should be observed in applying them. Stockard[15] has carried out a series of experiments with guinea-pigs which have been continued for 12 years, and cover many generations of animals. His method was to expose the guinea-pigs to a daily inhalation of alcohol fumes up to the point of intoxication. He found that very marked results were observed in the young of the alcoholised animals. He found, in brief: (1) that the fertility of the animals was diminished; (2) that the young were deficient in vigour and in power of survival after birth; (3) that a high proportion of developmental defects occurred; (4) that these defects were practically confined to the central nervous system and the organs of special sense; and (5) the defects were transmitted, in some instances, to the third generation, although only the original grandparents had been subjected to the influence of alcohol.

As regards the vitality of the young of alcoholised parents he found that only 46 per cent. survived, the survival rate for normal animals kept under identical cage conditions being 78·5 per cent. In the alcoholised animals deformities were found in 5·23 per cent. of the young, while they never occurred in control animals, unless they were closely inbred. In addition to the developmental deformities, considerable numbers of dwarfish, undersized young were found in the litters of alcoholised animals, while they were very rare with normal animals. The effects of alcohol on the male are much more marked than on the female; a certain number of normal females, after mating with normal males, were subjected during pregnancy to the influence of alcohol without any injurious effect on the young. Stockard opined, however, that evil results would have manifested themselves if the treatment with alcohol had been more prolonged.

Stockard attributed the results he obtained to a toxic effect of alcohol on the germ-plasm, producing structural alterations capable of transmission through several generations. This effect is much more marked upon the male than on the female. He did not think that alcoholisation of the fœtal environment had much to do with the effects produced upon the young.

How far these results can be held to be applicable to man cannot at present be settled. It is obvious that where alcohol is given by the method of inhalation its degree of concentration in the blood of the animal is never so high as when alcohol is given by the mouth. In these respects the experiments do not reproduce the ordinary conditions of alcoholism in man, yet the effects produced upon the nervous system of the young resemble in many respects those seen in man.

That alcoholism in the parents is one of the most important predisposing causes of mental deficiency (amentia) and epilepsy all the authorities on this subject are agreed. The percentage of cases of

amentia in which an alcoholic history can be obtained is put by different observers at rates varying from 4 per cent. to 40 per cent., which I think sufficiently indicates the difficulties of such an inquiry. We have no precise observations as to the difference, if any, between the children of alcoholic and non-alcoholic parents as regards birth weight and general vitality. The information we do possess, however, is, I think, sufficient to lay upon us the duty of advising abstinence from alcohol during pregnancy, and of pointing out clearly the possible deleterious effects on the child of over-indulgence.

EFFECTS OF MATERNAL DISEASE.

When we come to consider the case of the fœtus in utero which is subjected to the influence of maternal disease, a field is opened up which is so wide that it will only be possible to glance at the subject. There are no national statistics of the causes of antenatal death, and such information as we can gather about it is gleaned from the very valuable reports which most of our lying-in hospitals now publish. There are also some foreign statistics of which we can make use.

Couvelaire[18] has recently published data taken from the records of the Clinique Baudelocque in Paris, over a series of 20 years, 1890 to 1919 inclusive. During this period out of 57,642 births, there were 1769 cases in which the fœtus had perished before the onset of labour, equivalent to a stillbirth-rate of 3·0 per 100 births. The causes of death were stated as follows:—

Syphilis	653	Various	175
Toxæmias	346	No cause discovered	572

Syphilis.—It appears, therefore, that in this series more than 50 per cent. of the fœtal mortality could be traced to syphilis and to pregnancy toxæmias taken together. The number of syphilitics was probably in excess of the figure given, for a proportion of those classed as "undetermined" should in all probability be included. Couvelaire further states that since the rule has been introduced at the Clinique to practise the Wassermann test in all cases systematically, the proportion of syphilitics has risen to over 50 per cent. of the whole. It must be recollected that these are statistics of fœtuses which died in utero before the onset of labour. Unfortunately the English lying-in hospitals furnish no comparable figures regarding the proportion of fœtal deaths due to syphilis. Probably many cases are overlooked in this country because the Wassermann reaction is not in routine use. Apart from the incomplete returns of the hospitals, the only English data that we have bearing on the frequency of syphilis in the fœtus are those furnished by Eardley Holland in his recent work on the Causation of Fœtal Death, carried out under the auspices of the Ministry of Health. In his examination of 300 dead-born fœtuses only 42 cases of "proven" and six of "probable" syphilis were found, making together—i.e., including the "probables"—16 per cent. of the whole as due to syphilis. These figures are not really comparable to Couvelaire's, because in the latter the diagnosis was established not only by examination of the fœtus and placenta, but also by clinical examination of the parents, including the Wassermann reaction. Even when allowance is made for these divergences, it would appear than in the practice of lying-in hospitals syphilis is less common in London than in Paris. Probably a large proportion of our syphilitic mothers go to the Poor-law infirmary for their confinement rather than the lying-in hospitals.

At the same time it may be pointed out that our lying-in hospitals, and especially the antenatal clinics, have the opportunity of rendering a great public service by instituting a strict search for latent syphilis in women with a bad obstetric history. Modern methods of antisyphilitic treatment have in no department achieved more striking successes than in the prevention and cure of congenital syphilis. If all syphilitic mothers could be adequately treated during pregnancy the congenital syphilitic child would disappear, and the part which obstetricians could play in this work is clearly a most important one, for even if the hospitals have not facilities for treatment they could make the diagnosis and see that the patient was treated elsewhere. Couvelaire has published his results of antisyphilitic treatment at the Clinique Baudelocque during the years 1920-22. In 256 cases treatment was applied to the mothers as follows:—

1. Only during the later months; these women had a fœtal mortality of 30 per cent.
2. Throughout pregnancy; these had a fœtal mortality of 15 per cent.
3. Before and during pregnancy; these had a fœtal mortality of 3 per cent.

In contrast there were 218 untreated cases of recent syphilis which gave a fœtal mortality of from 65 per cent. to 70 per cent.

Results almost as striking as these have been obtained in London by Mr. John Adams at the V.D. Clinic for Syphilitic Mothers, established under the auspices of the Metropolitan Asylums Board.

INTRANATAL PERIOD.

Let us turn now to the causes of stillbirth as shown in the lying-in hospitals, and in dealing with these data we must first exclude miscarriages altogether; some of the hospitals do not admit these cases at all, and none give details bearing upon the causation of miscarriages, so that they are of no use for our present purpose. Next we must exclude cases in which the fœtus died in utero before the onset of labour (antenatal death), for in these circumstances the fœtus could not have been saved except possibly by antenatal treatment. There will then remain only those deaths which occurred during the birth process (intranatal death). We shall also, in connexion with certain points, have to include deaths in the neonatal period.

Antenatal death is the result of pathological processes, and can generally be recognised by the macerated condition of the fœtus when born; a few may escape recognition and be included in the intranatal class if death occurred too recently to allow of the occurrence of maceration. Intranatal death is in the main attributable to what we may call, using the term in a broad sense, birth-traumatism. Birth-traumatism is also responsible for a considerable number of neonatal deaths, the injury received in the birth process not being immediately fatal. The figures quoted from the Clinique Baudelocque include apparently only the first class; we have no information as to the number of deaths which occurred during birth—i.e., intranatal death.

In considering the number of fœtal deaths during labour in our own lying-in hospitals we must further take account of the fact that these hospitals receive a disproportionately large number of serious maternal complications in which the risks to the child are very high. Such conditions as ante-partum hæmorrhage and eclampsia figure largely in the hospital returns as causes of fœtal death. Further, a certain number of dead infants are delivered by craniotomy. I propose, therefore, to give first of all the gross rate, A, including all cases of dead-born children; then a corrected rate, which we may call B, obtained after deducting all cases returned as macerated; then a third rate, C, which has been obtained by deducting cases of craniotomy, of ante-partum hæmorrhage, and of eclampsia from rate B. (vide infra). The addition to rate C of neonatal deaths, directly traceable to injury, will give us the true intranatal death-rate. It will be recollected that the stillbirth-rate for the whole country is 3·3 per cent., and the dimensions of rate A, in most of the hospitals, is unexpectedly high. The rate is not much reduced by the exclusion of macerated fœtuses, except in the case of one hospital, and it will be seen that rate B is, on the average, less than 10 per cent. below rate A. The exclusion of the various maternal complications, however, cuts rate B down to little more than one-half in the case of all the hospitals alike. The figures shown in the

table have been calculated for an average of five years in all but No. 6, for which only three years were available.

Fœtal Death-rate.

Hospital: 5 years' average.	Gross rate.	Corrected rate.		Hospital: 5 years' average.	Gross rate.	Corrected rate.	
	A.	B.	C.		A.	B.	C.
	%	%	%		%	%	%
1	15·7	14·7	8·9	4	12·0	9·9	5·3
2	12·2	11·5	5·7	5	5·9	5·4	3·1
3	12·9	11·7	5·6	6	5·38	—	—

The difference between the fœtal mortality-rate of the first and last hospitals on the list is surprising. Hospitals 1 to 4 are all situated in great industrial centres; Nos. 5 and 6 are in London and their patients are drawn from a class which is engaged almost entirely in domestic work and business, or light factory occupations. There are no heavy industries in the parts of London served by these hospitals. The rate A figures for hospitals 2, 3, and 4 are so nearly identical that they carry conviction of their reliablity, and I think we may take it that they indicate that the loss of fœtal life is considerably higher in an industrial population than in what, for contrast, we may call a non-industrial population. We cannot enter into any consideration of what these causes may be, but the point is deserving of further inquiry.

Rate C is that obtained when all possible allowance has been made for the special difficulties of hospital work by the exclusion of all the graver complications of labour. Except in the case of one hospital, the rate is far above the national stillbirth-rate, in which all these complications are, of course, included. In the case of hospital 1 the national rate is nearly trebled. This is a result which I had not anticipated, and I would ask you to note that in regard to rate C, as well as rate B, hospitals 2, 3, and 4 give an almost identical figure, while hospital 1 is more than 50 per cent. higher than any of them, and nearly three times as high as hospital 5. Does this imply that the infants of parents living in great industrial centres show a diminished vitality as compared with those born in non-industrial centres, which renders them less able to bear the stress of labour? No answer can be given to this question either, but one or two points may be cleared up by looking into the recorded causes of death in Group C. They fall into three main groups: (1) birth-traumatism, (2) prematurity, and (3) congenital defects and diseases. A certain number remain which are difficult to classify.

Not all the hospitals furnish information sufficiently detailed for our purpose, but I have been able to examine an aggregate of 561 stillbirths falling into rate C, with the result shown as follows:—

Of 561 stillbirths falling under rate C—

48·7 per cent. were due to trauma.
8·3 per cent. were due to prematurity.
4·9 per cent. were due to defects and diseases.

The remainder, amounting to a little more than one-third, were unexplained, or due to a variety of conditions which do not lend themselves to classification.

It appears, then, that if we exclude cases in which labour was complicated by serious maternal complications, nearly half the fœtal mortality in the lying-in hospitals whose reports were examined is due to birth-traumatism. Of course, not all the cases included under this heading showed recognisable signs of injury; in a small proportion death was returned as due to "stress of labour" or some equivalent term. There is no doubt that some infants appear to suffer severely from the effects of what we should clinically call a normal labour; the transit of the child through the maternal passages will no doubt always carry with it risks the extent of which depends in part upon that incalculable factor the endurance of the child.

A large number of deaths from traumatism occurred in premature children whose power of resistance to shock is very low in comparison with the mature child. The two causes of injury and prematurity are closely related and it will be interesting to look a little more closely into the question of premature births.

The accompanying table brings out two or three points which are of some importance. The second column gives the proportion of births, which were premature in three different hospitals.

Premature Births.

Hospital.	Premature birth-rate.	Stillbirth-rate.		Neonatal death-rate.	
		Premature.	Mature.	Premature.	Mature.
	%	%	%	%	%
3	32·9	21·21	4·30	15·29	1·10
5	10·76	25·29	3·66	17·46	3·47
6	12·24	20·80	3·17	13·50	0·55

In hospital 3 nearly one-third of the children born in the hospital were premature; this hospital, as I have said, serves a large industrial centre. In the case of hospitals 5 and 6 the proportion is 10 per cent. and 12 per cent. respectively. All the hospitals serving industrial districts show about the same premature birth-rate as hospital 3. This table certainly suggests that women engaged in industrial work are unable to carry their children to term in anything like the same proportion as those engaged in lighter occupations. You will recollect that a somewhat similar observation was made by Pinard many years ago in Paris. It is impossible to pursue this point any further, but it also appears to be deserving of more extended inquiry.

Column 3 of this table shows the comparison between the proportion of premature and mature babies which are stillborn, and it is not surprising to find that the premature stillbirth-rate is from five to seven times higher than the stillbirth-rate for mature babies. This is partly accounted for by the fact that the greater number of fœtuses born macerated are premature; from the hospital reports I should judge the proportion to be about 60 per cent. The most important factors, however, are that maternal complications are more frequent in premature labour, and that even in their absence the premature fœtus is less able to endure the stress of labour than is the mature one.

Column 4 compares the chances of survival of premature and mature babies under the same hospital conditions. Here the comparison is enormously to the disadvantage of the premature baby. The neonatal death-rate of the prematures does not vary greatly in the three hospitals, and may be put at 15 per cent. The death-rate of the mature infants varies widely from one-fifth to one-twelfth of the premature rate. The figure of 3·47 for hospital 5 was due to exceptional circumstances which prevailed during two of the five years under review, and does not truly represent the average for that hospital. But between hospital 3 and hospital 6 there is a difference of 100 per cent. in favour of the latter. I must not comment on these figures for mature babies, except to suggest that the neonatal death-rate of some of our lying-in hospitals appears to be capable of improvement. I should like further to point out that we badly need a follow-up system for our premature infants; it is important that we should know how many of those who leave the hospital alive actually survive the first three months of life. We ought to know this because to estimate the results of induction of premature labour at the end of the first month is in all probability to present the results in an unduly favourable light.

I think I have said enough to show that from the point of view of life insurance the premature baby is a bad risk. In view of this fact we must recollect that a certain proportion of premature labours are deliber-

ately provoked by the obstetrician for one reason or another. Only those are suitable for examination which appear in the hospital reports as cases of pelvic contraction or of "disproportion," and I have collected the results of this procedure from three hospitals, which give full data. These results comprise 384 cases of induction, and show an average combined intranatal and neonatal mortality of 14·3 per cent.; in the individual hospitals the rate varied from 15·5 per cent. to 9 per cent. It is to be recollected that these are picked cases in which the general condition of the mother and the child was ascertained to be good before induction. The infant deaths are due in practically every case to some form of trauma, and the only thing that can be said about it is that if induction for disproportion cannot be carried out without an infant mortality of 14 to 15 per cent., it is time that it disappeared from obstetric practice. There is much truth in Ballantyne's contention that the premature infant is "partly a fœtus and partly a new-born child . . . in it we see neonatal physiology hampered in its action by persistent fœtal conditions." It is therefore only right that we should not make ourselves responsible for bringing infants into the world in this unfit condition unless there are sound reasons for so doing.

It will be, of course, admitted that the number of induced labours is relatively small, and that the bulk of premature births are due to the maternal complications of pregnancy which we have referred to. There is also, as we have seen, some evidence that social and industrial conditions may also be concerned, and this evidence may be shortly summarised thus:—

(*a*) Pinard showed that women admitted to hospital during the latter part of pregnancy carried to term in larger proportion than those who continued at work.

(*b*) Darwall Smith showed that premature births were four times as frequent in women with bad nutritional conditions than in those of average nutritional conditions.

(*c*) The English lying-in hospitals serving industrial districts with a large factory population show a proportion of premature births three times as high as London hospitals serving districts with a relatively small factory population.

BIRTH TRAUMATA.

We must now go back for a moment to the matter of birth injuries; you will recollect that we saw that traumatism and prematurity were the two chief causes of death in class C of our fœtal mortality table. We now want to see what direct evidence we have of the occurrence of birth traumata. The premature infant suffers severely because its vitality is low. On the other hand, the postmature or oversized infant may suffer severely because its bulk increases the mechanical difficulties of expulsion. Many normal-sized infants delivered by the natural forces alone arrive in a condition of profound shock from which, however, it is true, they practically always recover; their condition is, however, clearly the result of trauma. And further, a certain number of healthy infants die during the birth process without subsequently showing any injury to which death could be attributed. These deaths are probably occasioned by the infant's inability to withstand the stress of labour. The great proportion of intranatal deaths, however, are due to injury inflicted upon vital organs during birth. It is impossible to enter at all fully into this matter, but I want to try to form some idea of the extent to which fœtal deaths can be traced to this cause.

Herbert Spencer, in 1891, drew attention to the occurrence of visceral hæmorrhage in stillborn children, and Eardley Holland in his recent well-known work found evidence of intracranial trauma in 5 per cent. of the stillbirths he examined. Not all the lying-in hospitals give details from which an estimate can be formed, but, from the records of two hospitals, I have collated a series of 561 deaths under corrected rate C—i.e., after deduction of macerated cases, cases of craniotomy, ante-partum hæmorrhage, and eclampsia—and in 272 cases death was attributable in whole or in part to injuries received during labour. In addition 37 infants which were born alive died in hospital from similar injuries. The total loss of infant life from birth injuries was, therefore, 309, which exceeds 50 per cent. of the stillbirths and corresponds to a rate of about 4 per cent. of the total infants born in the hospital. When it is remembered that we are speaking now of infants born under conditions presenting no special difficulty, I think it must be admitted that the death-rate from injury is high enough to give us a good deal of concern.

With a view to tracking the causes of this heavy mortality from birth trauma, I have looked into the results attending delivery by forceps in the hospitals. It is to be expected that the great proportion of deaths from head injuries would occur in forceps cases, although this is not shown in the reports. The forceps results from three hospitals have been taken out for five years in each case, and all cases of craniotomy, of eclampsia, and of ante-partum hæmorrhage have been excluded.

Hospital.	Total cases.	Total fœtal and neonatal deaths.	Rate per cent.
X	940	116	12·3
Y	291	36	12·3
Z	516	155	30·0

The mean rate for the three hospitals is therefore 17·5 per cent., on a total of 1747 cases.

The forceps rates for each hospital—i.e., the percentage of cases in which forceps was applied—showed no great differences, for they were respectively 10·4 per cent., 8·6 per cent., and 9·7 per cent.

There is one further consideration which should not be overlooked—viz., that in a proportion of the cases unsuccessful attempts to deliver with forceps had been made previous to admission, sometimes in the hospital district, sometimes by independent medical practitioners. In such cases injury may have been sustained by the child before admission to hospital. In the case of hospital Y, the records permit of such cases being deducted, and the result is to reduce the number of deaths to 31 and the death-rate to 10·8 per cent. The other two hospitals do not make any mention of such cases.

It is not only in forceps cases that these injuries occur; they may, of course, occur in breech labour, and sometimes in clinically normal labours.

The low maternal mortality-rate of our lying-in hospitals is a source of great gratification to us all, but our methods of delivery have not yielded equally satisfactory results from the point of view of the safety and interests of the child. The loss of infant life is high, and we should like to feel that not in one particular but in all respects our lying-in hospitals are a model and an example of British obstetric practice. Where improvement is called for we look to the hospitals to take the lead.

I have now come to the end of what I am conscious is but a very imperfect review of the conditions which affect the fœtus during intrauterine development, and the risks to which it is exposed from maternal disease, from maternal hardship and privation, and from the rough usage of the birth process. I had hoped when I began to consider the subject that I might, in addition, lay before you a few suggestions as to the lines upon which we might strive to diminish our heavy fœtal mortality, and to ensure the arrival of our new-born in a condition of full development, uninjured by the birth process, and with an unobscured prospect of survival. The task was, however, too great for me, and I shall have to await another opportunity of ventilating this important question.

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THE BEHAVIOUR OF THE DIABETIC TOWARDS CIRCULATING GLUCOSE.

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THE relationship existing between glucose in flowing blood and glucose in the tissues is largely an expression of the variations in the factors of supply and demand. In the diabetic other factors appear to present themselves, and so much have we been impressed by the altered relationship which occurs in the diabetic that we have attempted to study some aspects of diabetic metabolism—together with the action of insulin—entirely from this point of view.

The simplest method of studying this relationship—in so far as blood and muscle are concerned—appears to lie in the simultaneous determination of glucose values in arterial and venous blood. The earliest work of this nature seems to have been done by Claude Bernard [1] (1877), MacLeod and Fulk [2] (1917), and subsequently by Henriques and Ege [3] (1921), by McCormick and others [4] (1923), by Cori, Cori, and Goltz [5] (1923), by G. E. Foster [6] (1923), by Pemberton and Cunningham [7] (1924), by Lawrence [8] (1924), and by Koopman [9] (1924).

In our work arterial blood was obtained from the radial artery, from the finger tip (for serial investigations), and from arteries bleeding during surgical operations; radial and finger blood have been shown by Foster [6] to possess identical amounts of glucose under all conditions, an observation which we have confirmed. Venous blood was obtained from the median basilic vein. Both procedures were carried out as nearly as possible together, the samples were oxalated, and estimations were made at once by the method of Folin and Wu.[10] Values of glucose and of substances chosen for controls are expressed in milligrammes per 100 c.cm. of blood. Emotion arising from pain, fright, &c., appeared to have no influence on either arterial or venous values.

TABLE I.

No.	Date in 1924.	Conditions.	Urea.		Glucose.		Chloride.		Phosphate	
			A.	V.	A.	V.	A.	V.	A.	V.
1	7/2	Ether 15 min., fasting.	13	12	110	100	487	463	—	—
2	8/2	Ether 40 min., fasting.	8	7	171	150	—	—	—	—
3	15/2	50 min. p.c.	10	11	86	79	425	412	4·3	4·2
4	18/2	½ hr. after 50 gr. glucose.	12	12	260	177	460	460	5·62	5·6
5	21/2	Diabetic fasting 5 hr.	22	20	300	214	—	—	—	—
6	22/2	2¼ hr. p.c.	45	46	120	120	494	502	11·7	10·5
7	26/2	30 min. after adrenalin and glucose.	13	12	231	200	450	440	5·0	5·0
8	3/3	Glucose and 6 units of insulin.	12	12	222	177	518	530	3·8	3·6
9	21/3	Diabetic 3 hr. p.c.	—	—	300	288	490	496	6·0	5·9

As it might be supposed on a priori grounds that such factors as circulation through the lungs and velocity of flow might themselves determine the difference between arterial and venous concentration of glucose, and might thus invalidate deductions drawn from presumably specific causes, we found it necessary to use controls. As will be shown in Table I., controls indicate that these constant physico-chemical factors exert little or no influence, contrary to the expectation of MacLeod.[11] The substances used as controls and estimated together with glucose were: urea by the method of Van Slyke,[12] chloride by Bang's [13] method, and inorganic phosphate by the method of Bell and Doisy.[14]

The values for glucose differ, whereas those for the controls do not; observations of these differences, in both diabetics and non-diabetics, in four separate conditions are set out in Table I. These four conditions are (*a*) fasting at rest, (*b*) with a glucose meal, (*c*) under the influence of ether, (*d*) under the influence of insulin both fasting and with food. In the fasting state the results obtained from both diabetic and non-diabetic are given side by side in Table II.

TABLE II.—*Fasting at Rest.*

Non-diabetic.					Diabetic.					
No.	Date.	Hours p.c.	A.	V.	No.	Date.	Hours p.c.	A.	V.	G.*
	1923.					1923.				
1	29/10	3	84	87	1	16/10	3	387	428	+
2	8/11	4½	60	58	2	11/12	3½	494	428	+
	1924.				3	16/12	5	294	315	+
3	7/1	2	90	71			5½	281	301	+
4	14/1	3½	70	70	4	28/1	3½	133	126	−
5	16/1	5½	88	88						
		6	87	90		1924.				
		6½	79	80	5	21/2	5	300	214	+
6	23/1	3½	70	70	6	13/3	4	250	285	+
7	30/1	2½	86	77	7	21/3	3	300	288	+
8	12/3	6½	86	86						
9	17/3	8	93	87						

*G = Glycosuria.

From these results it would appear that in the non-diabetic fasting tends to produce identical values; therein confirming the work of Henriques and Ege,[3] and of Foster [6]; very short or very long periods after the meal, as in Nos. 3, 7, and 9, show a relatively higher arterial value. In the case of the diabetic it would appear that there is nearly always a fasting difference between arterial and venous levels. In severe untreated cases the difference is largest, and in some cases the venous value may be greater than the arterial.

Influence of Glucose.

The ingestion of carbohydrates causes a greater rise in the arterial value, as shown in Fig. 1. Fig. 2 shows the effect of carbohydrate ingestion two hours after a meal, when the arterial and venous values have not yet resumed their normal fasting relationship; it will be noted that the rise in neither is so great as in Fig. 3.

Exhibition of glucose to diabetics under therapeutic control produced the same type of difference as with normals—i.e., arterial values were higher than venous. We have not considered experiments on diabetics not under control to be entirely justifiable, but we imagine that the arterial-venous relationship would be similar to that obtained under the influence of ether anæsthesia in the diabetic (vide Fig. 4).

Influence of Ether.

The anæsthetic administration of ether to normal subjects also causes a hyperglycæmic effect, comparable with that which follows the exhibition of glucose and adrenalin. Arterial values are also again higher than venous.

Non-diabetic.

Subject.	Duration.	Arterial.	Venous.
(1) A. B.	15 min., ether	110 mg.	100 mg.
(2) J. C.	40 min., ether	171 mg.	150 mg.

Arterial and venous values were studied in a diabetic of moderate severity and under control, on whom a major operation was necessary; he entered the theatre with a venous concentration of 99 mg. glucose and a CO_2 combining power of 57 vols. per cent.—he was under ether anæsthesia for 40 min.; during the first period the arterial concentration was higher than the venous, but later, as his uncontrolled diabetic condition manifested itself, the venous

FIG. 1.—*Non-diabetic.*

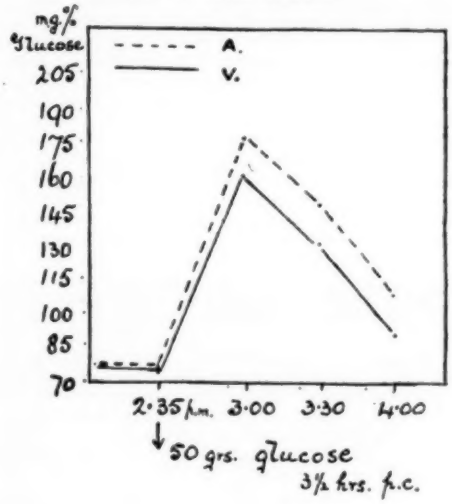


FIG. 2.—*Non-diabetic.*

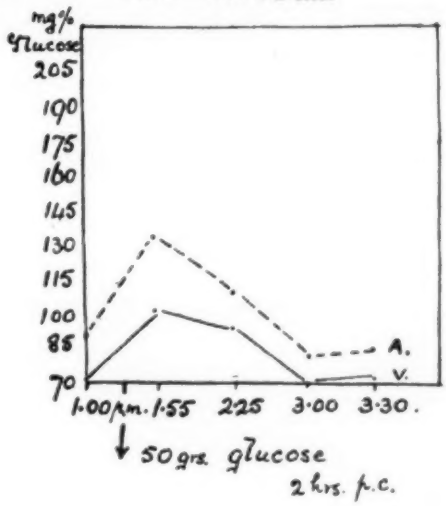


FIG. 3.—*Diabetic.*

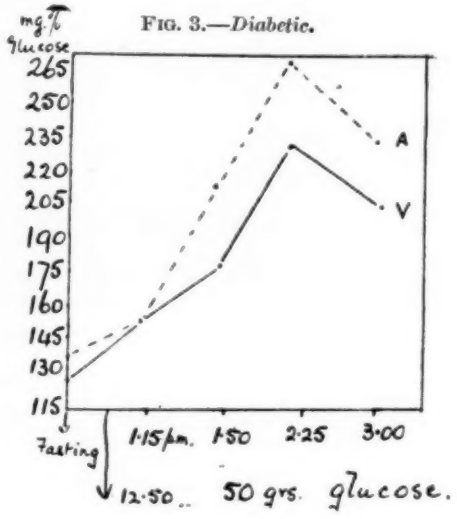


FIG. 4.—*Diabetic.*

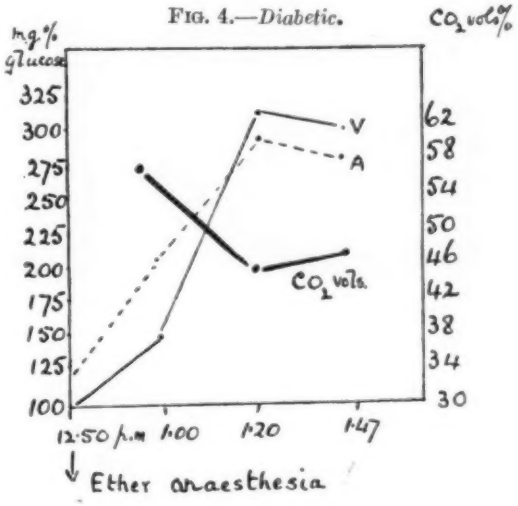


FIG. 5.—*Non-diabetic (with glucose).*

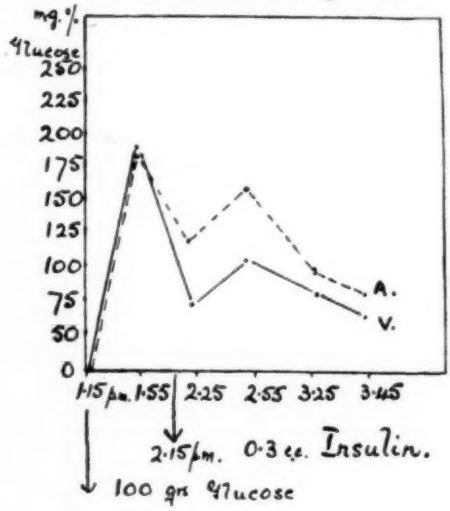
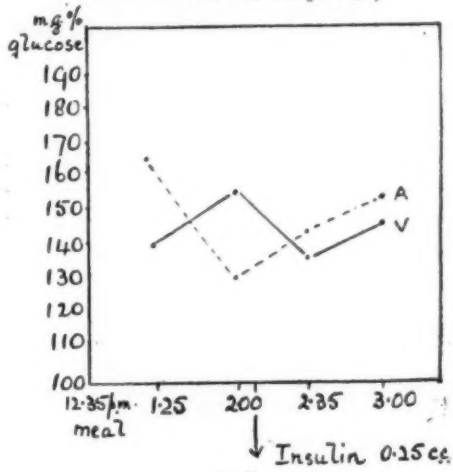


FIG. 6.—*Diabetic (with glucose).*



value became higher, glycosuria occurred and depletion of alkali reserve (Table III.). The behaviour of the diabetic during ether anæsthesia has been more fully studied by us in a recent communication.[15]

TABLE III.—*Influence of Insulin when Fasting.*

Non-diabetic.					Diabetic.						
No.	Date.	Conditions.	A.	V.	No.	Date.	Before insulin.		After insulin.		Dose in units.
							A.	V.	A.	V.	
	1924.					1923.					
1	4/3	4 hr. p.c. ..	124	116	1	15/10	—	—	266	132	10
		25 min. after 2 units* ..	93	93	2	19/10	387	428	188	165	10
					3	12/12	129	155	141	133†	5
2	12/3	6 hr. p.c. ..	86	86	4	16/12	294	315	153	146	10
		30 min. after 4 units* ..	86	77		1924.					
3	17/3	8 hr. p.c. ..	93	87	5	21/2	277	461	399	214	20
		30 min. after 4 units ..	86	80	6	13/3	250	285	—	—	—
					7	21/3	300	288	184	150	20
4	18/3	4 hr. p.c. ..	89	90	8	10/4	396	396	120	98	30
		30 min. after 8 units* ..	91	86							

* Units of insulin. † Glucose administered.

In fasting normals small doses of insulin have little effect on the glucose level and the arterial venous relationship. In diabetics, on the other hand, insulin not only reduces both arterial and venous values, but, when the venous value is higher than the arterial, a reversal occurs.

In the normal, insulin, given after the ingestion of glucose, exerts a specific depressing action on the value of blood-sugar; the typical glucose curve is cut short, and, as shown in Fig. 5, the difference already existing between arterial and venous values is still further increased by the relatively greater fall in venous concentration. We would draw attention to this result, as, apparently, a specific effect of insulin. Using anæsthetised animals, this effect was not obtained by McCormick and others.

In the diabetic, as in normals, a general reduction takes place; in the case of serial investigations, the apex of the curve is removed (Fig. 6). After the exhibition of insulin the venous value, if previously higher, always appears to fall below the arterial.

Conclusions.

From the results which we have recorded above it is clear that the diabetic differs from the non-diabetic in his behaviour towards circulating glucose. These differences are: (1) Fasting and without insulin—the arterial value differs quite widely from the venous. (2) With glucose and ether and without insulin—there is a greater increase in both arterial and venous values, and in the fasting state the venous value may rise higher than the arterial. (3) With insulin—either fasting or with food—the relationships between arterial and venous values tend to approach those of the non-diabetic.

The tissue which is here at fault appears to be muscle. In order to explain these observations, it must be assumed that diabetic muscle tissue cannot take up glucose, or cannot hold glucose, or is giving rise to glucose; all these abnormalities are removed in some measure by insulin. Upon what mechanism does this depend? There are several factors which tend to establish the diabetic type of metabolism. They may be summarised in their probable effect on arterial and venous glucose levels: (1) Tending to raise arterial content—glycogenolysis in liver; decreased power of glycogen formation. (2) Tending to lower arterial content—excretion of glucose by the kidney. (3) Tending to raise venous content—glycogenolysis in muscle; breakdown of tissue protein into its potential 54 per cent. content of carbohydrates; muscle saturated with glucose yielding up its excess; possible synthesis of glucose from fat.

All or some of these factors are responsible for the differences observed between arterial and venous blood in the diabetic; but when, under the influence of insulin, the diabetic tends to approach the non-diabetic type in such relationships, which of these factors ceases to operate? From our results, it is, we think, strongly suggested that insulin so influences the behaviour of the diabetic that he can take up glucose from arterial blood and, by holding it in his muscles, in some form exhibit those lower levels with an arterial superiority over venous content which is characteristic of the non-diabetic.

This may be attributed to several causes, such as diminution of glycosuria, sparing of endogenous protein, increased glycogen formation, or increased carbohydrate metabolism. Both the latter are known to occur; increased glycogen formation has been shown to take place in the liver of depancreatised dogs fed with carbohydrate and insulin by Banting and Best[16]; the respiratory quotient has been shown to rise in diabetics by Banting, Campbell, and Fletcher.[17] From this investigation we would submit that the behaviour of the diabetic and the characteristic alteration obtained with insulin turns upon the factor of glycogen formation, as foreshadowed by Langfeldt,[18] although we are aware that Dudley and Mariam[19] did not obtain increased glycogen formation in the muscles of normal animals in whom insulin convulsions had been produced.

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A CASE OF
CALCIFICATION OF THE PLEURA
OF AN UNUSUAL TYPE.

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CALCIFICATION of the pleura and lung stones have attracted the attention of physicians from the time of Aristotle and Galen, and reports of cases can be found in their records.[1]

Until the advent of radiography the reports were those of cases discovered post mortem or at operation, but since radiography has become general in lung conditions, a considerable number of cases of various types of calcification of the pleura have been reported.

A general review of the subject was published by Pritchard,[2] and his conclusion, based on reports from literature and eight cases reported by himself, was that the origin of the condition was usually not tuberculous. The analysis of his cases shows that of the eight, three followed pneumonia, two pleurisy (cause doubtful), one probably tuberculosis of the

[1] Aristotle and Galen, quoted by Flozzl, F., Gazz. med. di Roma, 1912, xxxviii., 562.
[2] Pritchard: Arch. Int. Med., 1923, xxxii., 279.

lung, one trauma, and for one no cause was discovered. This case showed merely an isolated calcified plaque. In no case were tubercle bacilli found in the sputum. Respiratory symptoms were complained of at the time of examination in all cases except the last, and it is into the same class as this that the case described here apparently falls:—

A. H., female, aged 54, was seen on account of pains in the legs and hips running downwards to the calves, worse on movement and relieved by rest. Six months previous to the date of examination she had been absolutely well, and denied any history of respiratory symptoms or disease. When seen she had no cough, sputum, or loss of weight, but she was slightly dyspnœic on severe exertion. There was no family history of tuberculosis. This history was confirmed by relatives. On examination she had signs of slight hypothyroidism. T., 97·4° F.; P., 80; R., 20. No enlargement of glands. Some evidence of osteo-arthritis of the hip-joints and some tenderness over both great sciatic nerves; C.N.S. otherwise normal. No abnormality detected in abdomen or in the urine. Pulses equal. Artery slightly thickened; B.P., 160/110. Chest well covered; antero-posterior diameter increased; movement poor, especially at the left base. Shrinkage of the bony cage on the left side. Heart not enlarged or displaced; sounds normal, but distant. Lungs—Left: note markedly impaired over the whole lung, especially in front, and in the axilla, except at the extreme apex and base. Vocal fremitus and resonance diminished in the left axilla, normal elsewhere; breath sounds diminished throughout and bronchial in character from the third rib in front downwards, and broncho-vesicular over the whole of the back; coarse râles, increased by coughing, throughout the lung. Right: normal, except breath sounds somewhat exaggerated and expiration prolonged. The radiograms reproduced here show a dense shadow outlining the left lung, and also the heart, in a lesser degree. There is some collapse of the lung at the extreme apex and also at the base.

Radiograms of a Case of Calcification of the Pleura.

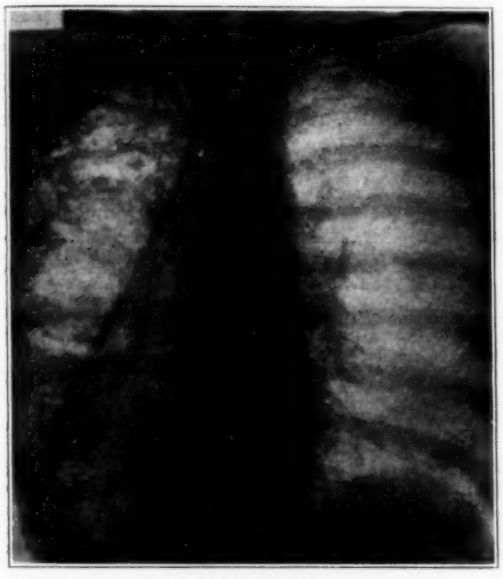

Plate in front.

Plate behind.

The points of interest about the case are: (1) the extent and the diffuseness of the calcification; (2) the absence of any respiratory symptoms at the time of examination; (3) the absence of any history of respiratory disease.

I am greatly indebted to Mr. G. Loughborough for the radiograms.

CULTIVATION OF THE SPIRILLUM OF RAT-BITE FEVER.

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LATE SENIOR DEMONSTRATOR IN PATHOLOGY, ST. BARTHOLOMEW'S HOSPITAL; CONSULTING PATHOLOGIST TO CHILDREN'S CLINIC, MARYLEBONE, N.W.

SINCE the discovery of the spirillum of rat-bite fever by Futaki, Takaki, Taniguchi, and Osumi [1] in 1915, numerous attempts have been made to cultivate this organism. Futaki and his co-workers claimed to have been successful with Shmamine's [2] medium, the cultures showing the organisms in great variety of shape and size from 1·2 up to 19 μ in length; they were, however, unable to grow them in subculture. These culture experiments have been repeated by many other workers as well as by myself. Using this medium at different pH concentrations, and incubating them at different temperatures, one nearly always obtains the "spirochæte" described by Futaki, but there is little doubt that one is dealing with "artificial spirochætes" as described by many workers. In 1922 Sangiorgi [3] records successful cultivations, but as no description of his medium has been given, and as repeated inquiries of the author have as yet elicited no reply, I have not been able to repeat his experiments.

During the course of my investigations with regard to the presence of the *Spirillum morsus muris* in the wild rats of London, over 25 per cent. of the rats were found to be infected. With a view to establishing whether all the strains found were identical, or whether they could be grouped in different types, cultures were made in the original Noguchi's medium and its numerous modifications, in most of the media used for the cultivation of the spirochæta icterohæmorrhagica as well as in the more commonly used media, under varying conditions as to reaction, temperature, and aerobiosis. All the cultures gave negative results.

In 1923 Vervoort,[4] in Sumatra, examined 258 patients with febrile attacks of unknown origin, and, using a medium composed of 1 g. peptone and 3 c.cm. normal phosphoric acid dissolved in 900 c.cm. distilled

water, he succeeded in growing spirochætes in 25 per cent. of the cases. Extensive experiments with the medium again proved unsuccessful until, in analogy with Boeck and Drbohlaw's [5] method of cultivating amœbæ, media were tried consisting of Vervoort's medium poured on the top of a solid medium. At last, on trying a medium composed of an ordinary inspissated horse-serum-slope (as commonly used for the cultivation of the Klebs-Löffler bacillus) covered by 10 c.cm. of Vervoort's medium with a pH of 7·2 inoculated with blood of an infected guinea-pig, I obtained positive results. The cultures were positive after 24 hours' incubation at 37° C. aerobically. Incubation at lower temperature or under anaerobic conditions gave less satisfactory results. Of six primary cultures made from the blood of six different guinea-pigs three were successful, and have now been carried on until the thirty-fourth subculture.

The reaction found to be most suitable for the growth of these spirilla is pH 7·2 to 7·6. In this connexion it should be remembered that the serum-slope acts as a potent "regulator" or "buffer." It was found that the reaction of Vervoort's fluid, which is originally 6·6, had altered to pH 7 to 7·2, after having been warmed for 15 minutes to 37° C. in contact with the serum-slope. From this it is evident that the reaction of the Vervoort's medium should not be readjusted to pH 7·2 before adding it to the serum-slope, as if this were done it would become too alkaline on incubation. In some of the cultures the spirilla were still found alive and actively motile after three weeks, and it seemed to make little difference whether they were kept at room temperature or at 37° C. Once the primary cultures were obtained it was just as easy to make subcultures in 1 per cent. glucose broth—preferably with the addition of some defibrinated rabbit's blood—as in the original medium. In both the primary cultures, as well as in the subsequent subcultures, mainly short forms were found after 24 hours' incubation, and only comparatively few long forms, whereas after further incubation the longer forms became predominant. So far I have not succeeded in infecting mice with the cultures, neither have I been able to obtain cultures from infected mice, but only from guinea-pigs.

A few interesting facts have been observed with regard to these cultures—viz., all the cultures, although made under the most strictly aseptic conditions, showed a motile coliform bacillus as well as the spirilla. Experiments are still being carried out to determine whether this is a matter of obligatory symbiosis, as in the case of Kermorgant's [6] spirochæte of mumps, or whether the bacilli are simply a chance contamination.

With a view to separating the spirilla from these bacilli, cultures were filtered through Chamberland's L.2 filters. Although actively motile spirilla could be observed in this filtrate, but never any bacilli, subsequent subcultures from the filtrate were still found to contain the bacilli. These filtration experiments are being repeated with L.3 filters, and it will be interesting to compare the results with those of Salimbeni, Kermorgant, and Garcin.[7] These authors, working with mice infected with rat-bite fever, failed to find spirilla in the spleen, but a filtrate through L.3 of an emulsion of the spleen was found to be highly infective for mice. As a matter of fact, they found that mice inoculated with such a filtered emulsion became as quickly and as strongly infected as those which had been inoculated with strongly infected blood. Another interesting point of minor importance is the discovery that the presence of yeast in the cultures apparently killed the spirilla within 24 hours.

A further and more detailed report of the work done is to be published shortly. This work has been carried out partly at the Wellcome Bureau for Scientific Research, under a grant from the Medical Research Council, and partly at the National Institute for Medical Research at Mount Vernon. I should like to record my thanks to Dr. Andrew Balfour and Dr. C. M. Wenyon—past and present directors of the former Institute—and to Capt. S. R. Douglas and Mr. C. Dobell, of the latter, for all the kindly interest they have taken in the work and their many valuable suggestions. Last, but not least, I want to thank Dr. P. O. Ellison for his untiring assistance and collaboration throughout.

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A CASE OF PSORIASIS.

ISOLATION OF MONILIA FROM THE SKIN SCALES, MOUTH, AND SPUTUM.

BY GERALD G. SANDERS, M.B., CH.B. EDIN.

THIS case of chronic skin disease, diagnosed in London and in India as psoriasis, is of interest on account of the isolation from the skin lesions, mouth, and sputum of a monilia, a member of a group found in thrush and allied infections and believed to be ætiological factors in disease in man.

Clinical Record.

Up to five years ago the patient, a married woman aged 36, was in good health. Her mother died with cancer in the stomach and secondary nodules in the liver. When travelling in India in 1920 the patient's foot was injured by accidental contact with the heel of a boot worn by another person. The skin on the dorsum was cut and she lost some blood. The cut did not heal, and in a day or two the skin around became discoloured, and a lesion similar to that shown at Fig. 1 (B) formed there. This lesion did not yield to treatment. Six weeks later she was alarmed to find on the external surface of both legs, around the knee-joint, similar lesions which became confluent; the disease then spread until the surface of both legs was partially covered. These lesions spread to various parts of the body, starting as small patches which rapidly became confluent. The skin condition has been described by more than one authority whom she has seen since 1920 as "typical of psoriasis," and in 1924 was again diagnosed as such. I saw the patient first on June 4th, 1925.

Condition on Examination.—On the skin on the lateral surfaces of both knee-joints large scaly lesions were seen; these were found also on the skin around the left hip-joint, on the back, on the left elbow, and also, to a lesser degree, on the face and scalp. In the sublingual region of the mouth an extensive white film seemed to cover the mucous membrane, and this film was seen also around an ulcer on the left margin of the tongue, an ulcer which had been present for a year and a half and which the patient associated with the friction of a dental plate. It was from one of my swabs from this ulcer that moniliæ were cultured; moniliæ were also found in the sputum, but they were not found in a special swab I took from the pharyngeal region. In the perineal region a number of short papillomatous tumours were seen, grouped together on quite a small area of the skin.

Organisms Described.—1. From scales of the skin lesion without culture; smear preparation Gram stain: (*a*) many Gram-negative coccidia; (*b*) streptococci and staphylococci.

2. From scales of skin lesion after culture in bouillon, 48 hours at 37° C.: (*a*) moniliæ and Gram-negative coccidia; (*b*) branching mycelial threads; (*c*) streptococci and staphylococci.

3. From sputum; smear preparation Gram stain: (*a*) Gram-positive cocci; (*b*) Gram-positive short chain streptococci; (*c*) Gram-positive diphtheroid bacilli; (*d*) Gram-negative cocci.

4. From sputum after culture at 37° C. for 48 hours: (*a*) a few colonies of monilia; (*b*) *Streptococcus brevis*; (*c*) *Staphylococcus aureus*.

5. From region of ulcer in left side of tongue, special swab, smear preparation Gram stain: (*a*) monilia; (*b*) streptococci.

6. From mucous membrane sublingual region; special swab, smear preparation Gram stain: (*a*) monilia; (*b*) streptococci.

7. From nasopharynx; special swab: (*a*) cultures sterile.

8. From urine and fæces no moniliæ were obtained; but many Gram-negative bacilli and Gram-positive streptococci.

The following are fermentation tests of moniliæ isolated on agar slope:—(1) Glucose: acid and gas. (2) Lævulose: acid and gas. (3) Maltose: acid and gas. (4) Saccharose: acid and gas. (5) Lactose: acid, mostly gas. (6) Raffinose: alkaline, no gas. (7) Adonite: slightly alkaline, gas. (8) Sorbite: strong alkaline. (9) Galactose: acid. (10) Mannite: acid, slow gas. (11) Dulcite: no reaction. (12) Insulin: no reaction. (13) Litmus milk: alkaline. (14) Neutral red: gas.

Moniliæ.—Macroscopic characteristics: on glucose agar the colonies of moniliæ appear as white, creamy colonies, about a quarter of an inch in diameter in many cases. Microscopic characteristics: the moniliæ appear as large Gram-positive cells (Fig. 2) frequently producing buds and mycelial threads. In this and other microphotographs from this film a sort of fine reticulum forms a bridge connecting each monilia. The word monilia means "necklace," the reticulum suggesting the "string" of the necklace. In Fig. 2 attention may be drawn to cells which take the Gram stain only in part of their substance; the remainder of their substance is stained with the counterstain. The Gram-negative coccidia are not included in this photograph, though they are cleary visible at this power in many of the films.

Summary.

These analyses and the information they give have an important bearing on treatment. They show that in the skin lesions and the mouth the streptococcus and the monilia are closely associated; the streptococcus is shown to be the more widely distributed organism as it was found in alimentary tract and urine, in the latter situation with *Bacillus coli*. The hæmoglobin was shown to be 60 per cent., but full count of the blood cells showed that otherwise there was no change from the normal. The patient appeared toxic, and had painful rheumatic symptoms in the left shoulder region as well as pain in the suprapubic region. These symptoms disappeared later, at which time the urine was shown to be sterile after 20 days treatment with urotropine. Antistreptococcic serum (Parke, Davis and Co.), polyvalent, was given subcutaneously to the extent of 30 c.cm. in all; the first dose was given in divided quantity, 9 c.cm. two hours after a preliminary injection of 1 c.cm. The right ankle became tender during the following few days, and there was a reaction throughout most of the skin surface; much redness and a sort of nettle-rash and itching. The serum was undoubtedly beneficial and later, after six detoxicated vaccines, made from the streptococci isolated from the skin lesions, all the painful back symptoms were removed. I propose to give another six of these vaccines. It is not possible here to go into the condition of the teeth, which were probably responsible for much of the streptococcus infection. I suggested ultra-violet light treatment for the skin condition and hope this may be applied to the mucous membrane of the mouth.

The patient is now having ultra-violet light treatment at one of the London hospitals.

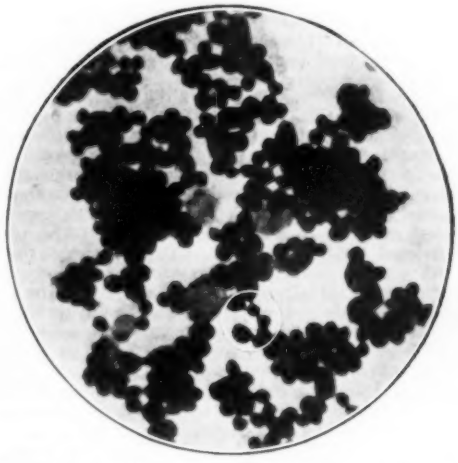
Acknowledgments are due to the Associated Clinical and Analytical Laboratories, Ltd., London, for laboratory assistance. I have availed myself of the opportunity to submit these organisms to the Curator, National Collection of Type Cultures, Lister Institute of Preventive Medicine, Chelsea, London, S.W., so that they may be preserved. Further research by fermentation and other experiments, and animal inoculation tests is very desirable.

(*Continued at foot of next page.*)

FIG. 1.

Photograph on panchromatic plate of lesions on the outer surface of the left leg in the region of the knee. The patch B is untreated; that at C has been treated with copper sulphate lotion (1 to 100), and that at A with tinct. iodi (10 per cent. in 90 per cent. alcohol); in both cases two days before the photograph was taken.

FIG. 2.



Photograph (× 1000) of monilliæ stained by Gram method. Four cells have only partly taken up the Gram stain. Within the circle can be seen the fine reticulum connecting the moniliæ.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

A MEETING of this Section was held on Dec. 3rd, Mr. T. G. STEVENS, the President, occupying the chair.

Exhibition of Specimens.

Dr. EVERARD WILLIAMS sent descriptions and slides of two specimens. The first was that of a Fallopian tube containing a loose fragment of menstruating endometrium associated with endometrioma of the ovaries. The patient had had for some time dysmenorrhœa, and this had been getting worse. The specimen consisted of both ovaries and tubes, and the uterus was covered with numerous dense adhesions, while there were cysts containing tarry material, these cysts having ruptured during the removal. Adhesions had bound the ovaries to the back of the broad ligaments, so that removal of the Fallopian tubes became necessary. These tubes, however, were seen to be free, and were normal in appearance. Both ovaries contained abundant endometrium in a non-menstruating phase. The right ovary was exhibited on the screen, showing on one side endometrioma, on the other side ovarian tissue containing an early developing Graafian follicle. A similar condition was present in the left ovary. In the right tube, in the region of the fimbriated extremity, were two fragments of tissue lying free and separate from the tubal mucosa. Those fragments proved to consist of endometrial tissue not in a menstrual phase of the cycle. The specimen, it was contended, confirmed the view of J. A. Sampson, of New York, as to the causation of this condition.

The PRESIDENT said he regarded this specimen as the missing link in the pathology of endometrioma. Many observers had been trying for some time to find endometrium in the Fallopian tube, and now it was forthcoming. He had always believed that Sampson's view would prove the correct one.

Dr. CUTHBERT LOCKYER said this was the most convincing proof which had been seen up to the present. Several observers had found fragments of endometrium in the menstrual blood in the pouch of Douglas, but this to-night was the most convincing evidence of the transference along the tube of necrobiotic endometrium. But in accepting the implantation theory as one explanation of endometrioma, one must be careful not to push it too far. What the profession was awaiting was information as to a common genesis for all these and similar conditions.

Dr. W. W. KING said he thought such a fragment would have difficulty in getting through the uterine end of the tube. He did not see why it should not have grown there. He found acceptance of Sampson's view difficult, as for damaged tissue to implant itself on undamaged tissue was unique in pathology.

The second specimen shown by Dr. WILLIAMS was a uterus showing multiple polypi of the cervix. The uterus was removed by vaginal hysterectomy. Examination showed nothing abnormal except that the cervix felt rough and irregular, and there was no bleeding on examination. A more complete examination under an anæsthetic showed that the cervical condition extended far up the canal, and that the roughness previously felt was due to large numbers of polypi. The specimen showed an unusual condition of the cervix; the endometrium was replaced by a diffuse growth of polypi, and the condition ceased abruptly at the level of the internal ostium. There was no evidence of chronic inflammation, therefore it was thought the condition was new growth.

Gliosarcoma in a Still-born Fœtus.—Ruptured Acute Pyosalpinx.

Mr. D. J. MALAN gave a short communication on a case of gliosarcoma in a full-time still-born fœtus. There was nothing abnormal in the placenta nor in the amount of liquor amnii. No abnormality in the fœtal head was suspected, but when the fœtal head was opened it showed bilateral internal hydrocephalus. There was some tearing of the tentorium cerebri, but no signs of hæmorrhage. In the cerebral hemisphere was found a round lump, and enclosing it was a very much flattened cerebral cortex, ½ cm. thick, covered by smooth lepto-meninges. Another, smaller, gliosarcoma was found in the other side of the cerebrum. The doctor in this case had been blamed for causing the state of affairs by putting on forceps prematurely and damaging the baby. The real cause of the baby's death was the tumour. He advocated more routine examination of fœtuses, when it would probably be found that such occurrences were not so rare as they were supposed to be. He also gave a description of a ruptured acute pyosalpinx which occurred in the third month of pregnancy, the patient being 37 years of age. There was abdominal pain, great nausea, and some vomiting, with a blood-stained, offensive vaginal discharge. The temperature was 101° F., the pulse 96, tongue moist and furred, and the abdomen very tender. The uterus was enlarged to the size of a two-months' pregnancy. On doing a laparotomy free pus was found in the peritoneal cavity. The left Fallopian tube had a perforation 4 cm. wide, and pus was oozing from this rent.—Several members discussed the communications.

Puerperal Sepsis.

Papers on puerperal infection were read by Dr. H. J. PHILLIPS (Monsall Hospital, Manchester) and Dr. L. COLEBROOK (London).

Dr. H. J. PHILLIPS spoke on Rational Treatment of Puerperal Infection, and said his intention was to deal mainly with the results obtained from the treatment of a series of cases along certain constant lines. The work was done at the Monsall Hospital, which was Manchester's infectious hospital. Here 22 beds were set apart for puerperal cases, and the admissions during a year varied between 90 and 120. Every encouragement was given to send cases as soon as possible, and none was refused, yet still many were too advanced and serious when received. In his experience of puerperal infection he had been much impressed by the great amount of extra-uterine injuries suffered by these patients, and the gravely septic nature of the region when patients were brought. He was not now speaking of tearing of the perineum. On exposing the vagina, remains of a lacerated cervix covered with foul sloughs, teeming with micro-organisms, were frequently found. The uterus of such a patient could easily become infected, and if the local defences failed, the infective process could become widespread. Though the acid secretions of the vagina might keep micro-organisms inert, in the alkaline lochia and the body tissues they might rapidly show pathogenic properties. Merely to drain the cavity or attack the endometrium was not likely to produce good results; therefore he had hoped for some means of helping the uterine wall to drain itself by promoting a flow of lymph through it into the cavity. Some time ago he had the opportunity of seeing glycerine used in the uterus for this purpose, and it seemed to him it might solve the problem, as

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(*Continued from previous page.*)

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it was a powerful tissue dehydrant, and its viscidity enabled it to remain for a long time in contact with the tissues, while at the same time there was no danger to the patient. The mixture he used was a 10 per cent. solution of tincture of iodine in glycerine, the iodine promoting the flow of lymph into the cavity of the uterus. Most of the patients were drained in this way once daily, the more severe cases twice a day. In the first 100 cases the average number of applications was seven, the treatment being continued until all active inflammation had subsided. In this method the local condition was well exposed and could be thoroughly cleaned, and there had been a rapid healing of the lesions. The chief source of trouble was the para-vaginal abscess associated with a badly torn vagina. Pus was found in the uterus in half the severe cases, usually only in small quantity, though in one case it amounted to 6 drachms. Often the doctor had assumed from the presence of a profuse purulent vaginal discharge that the uterus was draining well, the fact being that none was coming from it, the suppuration being high up in the vagina. The introduction of the iodine and glycerine tended to produce uterine contractions. In 130 cases in which he had employed lymph drainage (glycerine drainage) he had never explored the uterus, except for primary hæmorrhage; fragments of membrane, placenta, or decidua had come away in the manner spoken of.

Comparison of Results.

Dr. Phillips, for purposes of comparison, gave two series of cases and the results achieved. The first consisted of 87 cases which were treated by lymph drainage, and the second of 110 cases which immediately preceded the first named. In both the cases were of the same type and drawn from the same district. Before lymph drainage was done at the institution the treatment of these cases had been carried out on three main lines. The milder cases were dealt with expectantly—i.e., with vaginal douching, Fowler's solution, quinine, &c.; the more severe with anti-streptococcal serum or curetting. Of the 110 cases, 29 per cent. developed complications, 11 developing pus and needing operation; while of the 87 cases treated by lymph drainage, only 14 per cent. developed complications and only one developed pus. Dealing next with the mortality in the two series, that in the first 100 cases was 13 per cent., the lowest in the institution for many years; and all died of some condition which was already established when the patients entered the hospital. Also, since this method was inaugurated the average stay in the hospital had been greatly reduced, from 41·5 days to 26·2 days.

Acute Blood Infections: Laboratory Investigations.

Acting on Dr. Colebrook's suggestion, he had adopted two lines of treatment in cases with acute blood infections—namely, the intravenous injection of arsenical drugs, and the transfusion of immunised blood to help the patient's own defensive mechanism. The drug chosen was novarsenobillon. Disappointing results followed the use of small doses of arsenical preparation, large ones were followed by clinical improvement. He exhibited lists of cases giving many details.

Dr. L. COLEBROOK spoke of laboratory investigations which he had been carrying out on the same subject. He said that in considering what was the chief microbic agent of puerperal sepsis it was not necessary to go further than the hæmolytic streptococcus, which was probably the cause of 90 per cent. of the troubles of septicæmic cases and localised infections. There was no reason for supposing that puerperal sepsis was due to a special streptococcus. As to how the streptococcus usually gained entrance into the genital tract, it was generally taught that it was not normally present in the vagina, nor in the rectum, and he thought infection from both those sources must be rare. The problem here did not differ from that of surgical wounds generally. Ordinary non-hæmolytic streptococci were more easily killed by leucocytes than were the hæmolytic form. Was there any evidence that a woman's resistance to the streptococcus was lowered during the process of pregnancy and labour? There were now available means of knowing how efficient a person's blood was in killing streptococci, and it was found that there was no general tendency for the killing power of a woman's blood to be lowered during pregnancy and labour. He believed that blood invasions from the genital tract were more common than they were generally supposed to be. Blood in the capillaries had great power of killing off streptococci, and if a few of these organisms got through in the first few days of labour, if the woman's blood was normal, there was but little chance of those microbes surviving in the capillaries. But the woman's blood might not be normal, and in septicæmia the killing power of the blood was greatly reduced; it might be only 40 per cent. of the normal. The real reason was that in septicæmia the leucocytes were not normal ones; probably the microbes produced a toxin which was disabling to them. Then the microbes getting through would be able to survive. When a blood culture was done on a doubtful case of septicæmia, the bacteriologist should be asked to state how many microbes he found to the cubic centimetre; that gave important prognostic information. He had only seen one woman recover who had more than 100 streptococci per c.cm. in her blood.

With regard to local treatment, this, it would be agreed, was not at the moment all that could be desired. Two lessons learned in the war experiences were: that wounds infected with hæmolytic streptococci and containing damaged tissue and blood clot could not safely be left to themselves. Hæmolytic streptococci, as Sir Almroth Wright showed, could grow comfortably in damaged bloodless tissues and in blood clot. As the streptococci grew, the containing fluid lost all its bactericidal power, and at the same time the leucocytes were held back. Something of that kind must occur in the case of an infected wound of the genital tract. The worst cases of puerperal fever were those in which the lochia were suppressed and those in which instruments had been used and caused bruising of the tissues. And the war's second great lesson in this regard was the efficacy of fluid drainage, which Dr. Phillips had demonstrated in his series of cases.

Concerning general treatment Dr. Colebrook said that in septicæmia there were often millions of streptococci in the circulation, and the defensive mechanism of the patient was largely out of action. It was necessary either to have an agent which would kill off many streptococci and so give the leucocytes a chance to recover, or there must be an agent which would neutralise the toxins which were damaging and inhibiting the leucocytes. Antistreptococcic serum appeared to have no strong place; to do any effective killing of the bacilli, a pint of it would have to be given. With regard to drugs, the most hopeful of those he had worked with was neosalvarsan, and the killing power of that was pronounced in a strength of 1 in 100,000, reducing 526 streptococci per c.cm. to 3 in five hours. Concerning transfusion, one could not hope to save a patient by this alone. Reasons for this probably were that by defibrinating blood one deprived it of about 30 per cent. of its corpuscles and mixed it when transfusing with nine times the quantity of the patient's own blood. Still, he thought it was right to go on working at drugs and transfusions.

Prof. LOUISE MCILROY said the results she had had from carrying out Dr. R. Hobbs's treatment (injection of glycerine) had been extraordinarily good, drainage having been done for seven days. Most of the cases of puerperal sepsis were due to laceration. Recently she had been raising the patient's immunity by giving antistreptococcus serum and quinine before clearing out the uterus, and the results had been such that she intended to continue the practice. Results from blood transfusion seemed to last only four or five days.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society was held at 11, Chandos-street, W., on Nov. 27th, Dr. WILFRID S. FOX, the President, occupying the chair.

Medico-legal Problems in Relation to Venereal Disease.

Dr. F. G. CROOKSHANK read a paper on medico-legal problems in relation to venereal disease, which, he said, touched on the provinces of ethics, politics, sociology, religion, and jurisprudence, and could hardly be appreciated without some acquaintance with history and with human nature. The crux of the question was that, however loudly some might say that venereal diseases were not different from other diseases, human nature would never permit these diseases to be dealt with by the *ordinary* routine of notification and sanitary administration. Venereal disease was fundamentally one of the consequences of breaking the social-sexual code, and the occurrence of venereal disease in a population always seemed to be associated with the breaking of a social code, no matter what that code had been. He thought it might be taken as axiomatic that however the social or moral code might change, and whatever degree of promiscuity or liberality in sexual matters might be allowed—and, of course, the sexual and moral code had changed in an extraordinary way during the last ten years—yet the imputation against a person that he had venereal disease would always be actionable. To say of anyone that he or she was unchaste might at one time have induced social avoidance, though it by no means necessarily followed that it would always do so, but the presence of venereal disease would continue to make a person shunned by even the most degraded. He did not see how the lawyers could draft any Bill which, merely by making the communication of that disease to another person an offence, would be effective in the prevention of venereal disease unless doctors could definitely say, in more than a few cases, that the suspected person *must* have known himself or herself to be in an infective condition. If it was desired to constitute a new kind of offence it would have to be proved that there was guilty intention, and that the person knew what he was about. This meant that it would be necessary to prove warning. Could warning be proved unless communication had been made to some third person?

Mr. EWART WORT, Barrister-at-Law, pointed out that while in respect to some sexual offences the law usually required corroboration, a conviction in such a case as Dr. Crookshank had instanced would depend upon whether the doctor was to be believed when he said he had given warning, or the accused person was to be believed when he denied it, and from his own experience at the Bar the doctor's evidence would be accepted.

Dr. CROOKSHANK said that, at any rate, it would be impossible to induce lawyers to recognise as an offence an act of this nature unless it could be shown that the person who committed the act really understood his state and had been warned in respect of his infectivity. Germany and Sweden appeared to have adopted legislation in respect to the communication of venereal disease, and their experience must be valuable. While, no doubt, a medical examination before marriage would be an ideal arrangement, he could not help feeling that one could not go safely beyond the requirement of a statement on oath by the parties made at the very last moment. He recalled a case within his own experience of a man who only on his very wedding day discovered that he was suffering from venereal disease, the last illicit connexion having dated from three months previously. The very fact that some such declaration was required at the last moment might go some way to induce a feeling of responsibility. It seemed necessary, however, to fall back upon the continuation of the present state of affairs, even if there was occasional occurrence of the position so often alleged to be frequent, wherein Dr. A was aware that Mr. B had venereal disease and intended, in spite of all expostulation, to marry Miss C. In England a breach of professional confidence was not an offence in itself and so punishable, as was the case in some countries abroad. If a medical man broke professional confidence by saying that a certain person was syphilitic and so injured him, it was possible for that person to bring an action against him for slander or libel, but not for breach of professional confidence. The doctor (granted, of course, that he was sure of his ground) should, however, be prepared to take the consequences, which the speaker did not believe would be serious to himself under such circumstances, and to warn Miss C or her parents. In such difficult cases members of the profession should have the courage of their convictions. If they technically broke the law and uttered slander in order to prevent the marriage of a syphilitic to an innocent person he did not think that in the long run the law would punish them very severely, while there was nothing in the oath of Hippocrates to prevent any man conscientiously breaking professional confidence in such circumstances.

Mr. WORT dealt principally with the compulsion upon witnesses to give evidence in courts of law. There were certain exceptions to such compulsion. On the grounds of public policy, no husband or wife was compelled to make a statement which was the result of communication by the other. No person was compelled to give evidence in a court of law when the evidence would incriminate himself. And there was the third exception, the privilege which a member of the legal profession enjoyed in regard to communications made to him in the course of his professional activities. This last was an anomaly, but it was absolutely necessary by reason of the fact that without that privilege the administration of justice could not be carried on. It might be asked, why the distinction between the medical and the legal professions in this respect? But the point was that of all the information obtained by the medical man in the course of his profession, not one-thousandth part would ever be the subject-matter of litigation, while in regard to the communications made to a lawyer, every such communication carried the potentiality of litigation. This privilege of lawyers was not the privilege of a profession as such; it was the privilege attaching to a particular kind of communication. Dr. Crookshank had referred to the law in other countries. It was part of the penal code in France that any communication made by a doctor in breach of his professional oath was a criminal offence, but there was an exception—namely, when he was compelled to give evidence in a court of law. If further legislation was necessary in order to get to closer grips with the social problem put forward by Dr. Crookshank, it was for the medical profession above everybody else to educate the public up to the point of such legislation. Any legislation making it a penal offence to communicate this disease to an innocent person must take into account the state of knowledge of the person indicted. An analogous class of case in this respect was the receiving of stolen property, which was extraordinarily difficult to prove. The law had surmounted the difficulty by putting certain tests which the jury were instructed to apply to the particular case. One such test was whether the person had purchased the property at a very low price; if he had done so it might be justifiable to suppose that he knew it to have been stolen. Whether some similar tests could be applied to persons suffering from this disease was for the medical profession to state. In the case cited by Dr. Crookshank of Dr. A, Mr. B, and Miss C, the only possible action would be an action for slander, and to such an action justification was a complete defence. But there would be a further defence in the shape of what lawyers called qualified privilege. The difficulty with medical evidence, however, was that occasionally Dr. A went into the box and said one thing, and Dr. Z another.

Discussion.

In the course of the discussion Colonel L. W. HARRISON spoke of the need for circumspection in relation to venereal diseases clinics. It would have a most disastrous effect if the public were deterred from coming freely to get treatment by the fear that there might under certain circumstances be a disclosure of their condition.—Dr. D. N. NABARRO put the case for legislation to compel parents to have their children who were congenital syphilitics treated.—Mr. WORT said that there was no specific legislation in this matter, but, of course, a parent could be prosecuted where it was proved by a medical man that a child was being wilfully neglected through not receiving treatment.

Exhibition of Clinical Cases.

Dr. H. McC. HANSCHELL showed two clinical cases, one a case of ulcerating granuloma in a Chinaman, which he had already shown eight months previously before the Society; and the other a case of congenital syphilis in a boy, which, in addition to the characteristic facies, showed necrosis of the maxilla.

Dr. P. H. MANSON-BAHR, in alluding to the first of these cases, said that it was a very interesting condition and occurred in definite geographical areas in the tropics, being very common in New Guinea. It was also found in Chinese treaty ports, in South Africa, and in the West Indies. Dr. Hanschell's case was the sixth consecutive one he had treated during the last four years. There was no doubt whatever that antimony tartrate was specific for this disease, among others. The substance must be given by the intravenous route, and must be persisted in for months. It should be given in 1 or 2 per cent. solution, commencing with ¼ gr. dissolved in 5 c.cm. of distilled water, and gradually increasing to the maximum tolerated dose. The maximum dose one could give was 5 gr. a week. Intolerance was usually shown by acute muscular pain. Local measures were of the utmost importance. Ulcerating granuloma had the peculiarity of spreading in one direction while retreating in another. It might burrow underneath the pubic region and extend in the scrotum. More recently he had used antimony tartrate in paraffin ointment; this was spread on the ulcerating surface, and left on for about two and a half hours, care being taken that it did not impinge upon the healthy surrounding skin. Antimony tartrate appeared to cause a considerable degree of local reaction and sloughing. In these cases one should never give up hope. A point to emphasise was the inadvisability of surgery. In one case in which the healing by medical treatment was successfully accomplished after three and a half years, surgery was practised at one point, and immediately expansion took place at the edges of the wound.

Dr. NABARRO referred to the second case shown by Dr. Hanschell. In all the cases he had had under his care at Great Ormond-street, numbering over 500 now, he had only in one instance seen necrosis occur in the position shown in the case exhibited that evening. There was no doubt that the boy had had also some gummatous necrosis of the bones of the skull. In a case of this kind he would advise that the cerebrospinal fluid be examined, and if it proved to be positive, salvarsan serum should be given.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting of this Institution on Nov. 26th Dr. JOHN HAY and Dr. PHŒBE INCE communicated a short paper dealing with the uses of

Diathermy in Cardiovascular Disease,

more particularly in patients with angina, major and minor, in cases of high blood pressure with various manifestations of distress, and in one case of intermittent claudication. Some of the patients had been kept under observation over a long period and the effects of the diathermy had been noted for the last two years. Weekly records had been kept of the variations in blood pressure, both systolic and diastolic, in the heart rate, and in the clinical findings, showing the response to treatment. In most instances there was definite improvement, in some cases dramatic improvement. Not only were the pressures reduced as the immediate result of treatment, but when the course of treatment terminated the improvement was maintained. In nearly every instance, whatever the variations in blood pressure, there was marked subjective improvement. The response to treatment was much more satisfactory in the males than in the females. In considering these results there appeared to be no doubt as to the benefit derived from this line of treatment.

Mr. R. E. KELLY read a paper on

Grafts and Grafting.

After a brief historical survey he considered the various methods of skin grafting. He said that the essential features in a successful Thiersch graft on a granulating area were as follows: 1. The area must have a flat instead of a heaped-up edge. This could be obtained by Beck's method of protecting the growing epithelial margin by strips of half-inch Z.O. eye strapping for a few days. By this means the exuberant granulations were flattened out and the marginal cranny of sepsis obliterated. Further, it saved the delicate new epithelial edge from being pulled off with the dressing. The last dressing should consist of 50 per cent. alcohol. 2. The granulating area must neither bleed nor weep. It should show neither sloughs nor bruises. 3. The operation should be done with absolute dryness. As Ochsner showed, there were disadvantages in moistening the razor with saline, glycerine, or antiseptics. No dressing was needed. Around the area a nest of gauze was placed and on top of this, but not touching the grafts, a piece of celluloid was fastened down with strapping. In immediate grafting Mr. Kelly spoke of the value of a stent or dental wax cast over the graft so as to apply even pressure and prevent the exudation of serum between the bed and the graft. He then spoke of the inlay grafts of Esser, Gillies, and Pickerill, and showed examples of eyelid grafting for ectropion and whole skin grafts for the deformity following lupus of the nose. Photographs of the tubed or jug-handle graft were shown illustrating the restoration of a lower lip lost by cancrum oris in infancy. Mr. Kelly spoke of Gallie's work on the tensor fasciæ femoris and its multifarious uses as a grafting material. He showed cases in which he had used it for uniting a fractured patella, for repairing an extensive post-operative hernia, and even repairing an inch gap in the extensor secundi internodii pollicis tendon. In the last case the result after a year was complete and strong movement of the terminal phalanx in complete contrast with a similar operation done for the flexor tendons of the palm. Despite primary union the palmar operations had failed. There appeared to be too much fibrosis and the grafts had stuck to the palmar fascia. Cartilage grafts for nasal deformities were next considered. They were extremely useful in accidental depressions, but were apt to be disappointing for cases of congenital syphilis. Finally, Mr. Kelly described his method of wedge-shaped bone grafts. He had used this for the fibula to prevent the slipping of the peroneal tendons and in the tibia to bridge a gap of an inch or so. The paper was illustrated by lantern slides and the result shown in a preliminary exhibition of patients.

IMPROVEMENTS AT THE METROPOLITAN HOSPITAL.—With the approval and help of King Edward's Fund the Metropolitan Hospital in the Kingsland-road, which serves the poor and densely populated districts of Shoreditch, Haggerston, Hoxton, Hackney, Bethnal Green, and Stoke Newington, is about to make improvements which will cost £54,000, of which nearly one-half has still to be raised. The principal work is the erection of a home for the nurses, who at present are scattered over "a jumble of broken-down property," most inconveniently situated, with passages so dark that gas has to be kept burning continually, but there will also be two new accident wards.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, ST. ANDREWS.

AT a meeting of the Institute on Nov. 24th Dr. IVY MACKENZIE gave an address on

Insulin in the Treatment of Toxic Delirium.

He explained that by toxic delirium he meant the condition recognised in psychiatric practice as "exhaustion psychosis," and sometimes referred to as toxic confusional insanity or amentia. The condition itself might be readily recognised by those who had an opportunity of seeing a large number of mental or nervous cases. It supervened on the basis of chronic nervous disorders of a hysterical or neurasthenic character; it sometimes occurred in the puerperium and also after the production of an artificial menopause. It began suddenly with excitement, sometimes of a violent character; the excitement passed into delirium, and if this stage were survived it was followed by a period of confusion which tended to clear up after a time. This form of illness he had seen only in women, and during the last year there were 18 cases among the 350 women who had passed under his notice in the mental observation wards in the Eastern District Hospital, Glasgow.

Hitherto he had treated such cases with chloral with some success. A year ago, following a discussion with Dr. J. H. Burn on the action of insulin and its relation to other internal secretions, he employed that drug in three cases. The beneficial effect was beyond doubt and compared favourably with its influence in diabetes mellitus. Treatment was begun with 5 units thrice daily, and this was gradually increased to 7, 10, 12, and sometimes to 15 units thrice daily. Chloral was employed, but mostly at night only. In some cases the patients appeared to be more susceptible to the poisoning action of chloral when insulin was given. One death occurred, and that in a woman who had also chronic renal disease and arterial degeneration; 14 had been discharged recovered, although some of these exhibited signs of what was probably their "nervous state" prior to the acute illness; three were convalescing; no patient suffering from this condition had been certified for asylum care since the treatment was initiated. Referring further to the clinical aspects of the cases, it was pointed out that fever was sometimes present, and that a leucocytosis of 10,000 to 20,000 was present in all except two. The blood-sugar curve was abnormal at some time in every case. It was frequently of the diabetic type, but occasionally there was an abnormally low curve, as, for example, in one case where the estimation was 0·05 per cent. on the fasting stomach, 0·09 per cent. at the height of the curve after 50 g. of glucose, 0·075 per cent. after an hour, and 0·06 per cent. after two hours. Notwithstanding the low estimate insulin was given, and after a week, when the patient had made considerable progress toward recovery, the curve had risen and showed the diabetic features with 0·135 per cent. on the fasting stomach, rising to 0·21, 0·25, 0·18, and 0·165 at half-hourly intervals. A striking feature of the metabolic abnormality was the presence in some cases of a blood-sugar content of 0·3 per cent. with no sugar in the urine, and no evidence of renal disease. The participation of the endocrine system in the upset of metabolic equilibrium which characterised the illness was probable. Reference was made to the experimental and clinical evidence of the relation of the ductless glands in diabetes, and in the case of toxic delirium it was pointed out that the abnormality of the ovarian system in all likelihood played a part. It was likely that the therapeutic use of insulin would be extended beyond the limits of diabetes mellitus, and that it would afford a means of approaching a solution of the problems not only of the ductless glands, but of a whole series of syndromes in which disordered metabolism played a part.

Reviews and Notices of Books.

MODERN MEDICINE, ITS THEORY AND PRACTICE. An original contribution by American and Foreign Authors. Edited by Sir WILLIAM OSLER, M.D., F.R.S. Third edition, thoroughly revised. Re-edited by THOMAS MCCRAE, M.D., Professor of Medicine in the Jefferson Medical College, Philadelphia, assisted by ELMER H. FUNK, M.D., Assistant Professor of Medicine, Jefferson Medical College, Philadelphia. Vol. I.: Bacterial Diseases; Non-bacterial Fungus Infections; the Mycoses. London: Henry Kimpton. 1925. Pp. 845. £12 12*s.* per set of six volumes.

IN his preface to the first volume of the new edition of this monumental system of medicine Dr. McCrae states that at about the time of the onset of Sir William Osler's last illness (some six years ago) correspondence was taking place as to the possibility of a third edition. It was a gratification to him to feel that this was being called for. Dr. McCrae adds some interesting personal notes as to the origin of the work which was to bring such widespread fame to its editor. At the first consideration of the possibility of his bringing out a system of medicine, Sir William Osler felt apprehensive that it might be too great an additional burden in his busy life, but finally consented to undertake it. With the work once started he became much interested and the success of the first and second editions pleased him greatly. His conception of the right article for a system was a discussion of a subject at a length between the brevity in a text-book and the extensive consideration possible in a monograph, with the needs of the general practitioner kept well in mind. For the most part he was able to inspire his contributors with his own ideals, and the result was a well-balanced work which merited the popularity it received.

In the 12 years that have elapsed since the first volume of the second edition appeared many changes have occurred in our knowledge of disease, and new diseases, such as botulism and epidemic encephalitis, have come into prominence. The discovery of the ætiological agent or further study as to the cause has altered many points in the control and treatment of some diseases, such as scarlet fever and bronchial asthma. A new therapeutic aid has come into prominence, altering the whole aspect of the treatment of diabetes mellitus. In the present edition the discussion of the pathology of tuberculosis by Dr. A. K. Krause is a departure from the traditional method. Dr. Du Bois gives a clear and comprehensive concept of the modern problems in metabolism. As to the subject-matter of this first volume, it has been to some extent rearranged. With the exception of the short section on fungus infections, the whole book is devoted to bacterial diseases. Scarlet fever has been placed among these, but the other exanthemata and fevers of doubtful causation, including rheumatic fever, are no longer included. The articles on typhoid fever, lobar pneumonia, and tuberculosis occupy more than half of the volume; the first two of these retain their old form, but have undergone revision and enlargement. As already stated, the section dealing with the pathology of tuberculosis has been rewritten, and a large amount of new material has been incorporated in the sections on other aspects of that disease. The shorter articles contained in the second half of the book have received numerous additions embodying the advances of the last 12 years.

Dr. McCrae has rendered great service to the medical profession in keeping up to date so valuable a work and in perpetuating the memory of its first editor. The essay on the Evolution of Internal Medicine, written by Osler in 1907 as an introductory chapter to the first edition, and omitted from the second, has been restored, and may claim a high place as a classic in the literature of the history of medicine.

THE MODERN PRACTICE OF TOOTH EXTRACTION.

By LESTER RICHARD CAHN, D.D.S. New York: The Macmillan Company. 1924. Pp. 132.

THE fundamental principles of tooth extraction are based on the application of mechanics to the anatomy of the teeth and jaws. The different methods of leverage utilised in extraction by forceps vary according to the nature of the roots and to the resistance offered by the alveolar bone. Thus the operation of tooth extraction must be to some extent stereotyped. Yet in practice we find that there is perhaps no part of dentistry in which there is such a wide variation of method on the part of individual dentists. Manual dexterity and the ease of constant practice count for much; one operator using methods to all appearance heterodox may be far more successful than another who uses the orthodox method. Manuals on tooth extraction, of which there are many, usually represent the practice of the individuals who write them, and since these are generally dentists of large experience, their books have a personal interest often lacking in more academical publications.

This volume may be taken to represent the American methods, which differ from those current among the majority of British dentists. The actual technique employed does not appear always to be the most efficient mechanically, though doubtless, in the author's hands, it yields excellent results. Some of the forceps recommended by Mr. Cahn appear clumsy when contrasted with English forceps. He advises the use of bayonet-pattern forceps for extracting upper incisors. But the straight forceps commonly used in this country, being applied in a straight line with the long axis of the tooth, surely represent the maximum efficiency of force with the minimum risk of fracture, whereas the bayonet type, though admirably adapted for extracting upper third molars, are less mechanically efficient for front teeth. It is curious to find no reference to the use of the straight elevator for the removal of lower wisdom teeth, in the use of which the backward curve of the roots, which offers so formidable an obstacle to the use of forceps, is utilised to facilitate extraction. The statement that no tooth should be extracted unless previously radiographed is surely a counsel of perfection and probably not feasible even in America, where an X ray outfit is much more often possessed by the dentist in general practice than in this country. The use of an elevator for extracting upper third molars appears to us as too dangerous a procedure to be commended for general use. The advice to pack a socket *tightly* for the treatment of hæmorrhage is unsound. It invariably leads to infection of the socket with the risk of secondary bleeding. Packing a socket for hæmorrhage, unless as a last resort, is to be deprecated. The statement that "whole blood taken from a parent, or in urgent necessity, from the operator himself, injected into the patient will stop the hæmorrhage in some cases" lacks the important proviso that the donor must be of the same blood group as the recipient. There is a chapter on blood pressure which contains useful information not generally included in a dental text-book.

THE SPHENOIDAL SINUS.

Le Sinus Sphénoïdal. Par GEORGES CANUYT, Professeur de Clinique Oto-Rhino-Laryngologique, et JEAN TERRACOL, Chef de Clinique Oto-Rhino-Laryngologique à la Faculté de Médecine de Strasbourg. Paris: Masson et Cie. 1925. Pp. 278. Fr.25.

THE introduction to this book contains the surprising statement that the sphenoidal sinus has been neglected in recent years, "secluded in the depths of the nasal fossæ, it has likewise been secluded in the folds of forgetfulness." The authors admit that the anatomy of the posterior sinuses has been thoroughly studied and mention the famous anatomical collection of Onodi, which has been acquired for London, but say that exploration and surgery of the sinus have scarcely entered into the region of current practice. That, at any rate, can hardly be said to be the position in this country, and the authors pay adequate tribute to the work of Dr. P. Watson-Williams, whose method of exploration they have adopted. The anatomy of the sphenoidal sinuses is dealt with very fully, together with their variations in size and shape, and the relations with neighbouring structures; this section is illustrated by numerous diagrams, some of which would be easier to interpret if the plane of section were indicated. Methods of examination and exploration are discussed in the next section; the importance of thorough shrinkage of the mucosa with cocaine and adrenalin is insisted on. The authors would have done well to have given an account of their technique of producing local anæsthesia of the soft palate for posterior rhinoscopy, instead of merely giving a reference to a communication in the *Archives Oto-Rhino-Laryngologiques*; they appear to employ a palate retractor, but do not describe it.

A short description is given of a method of transillumination of the sphenoidal sinus by means of a long light-carrier and a pharyngoscope, but it is rightly stated not to be very reliable. The chapter on radiography of the sinus is among the best in the book and includes details of many different methods and angles of approach; some radiographs are illustrated, taken in the chin-vertex line, which show good definition of the cavities, and the intrabuccal film is also well described and illustrated. Of the surgery of the sphenoidal sinus, two methods of approach are mentioned and fully discussed, the "turbinal" and the "septal" routes; the authors consider that the septal route is the easier and the more surgically precise, but that it has the disadvantage of not giving access to the posterior ethmoidal cells, which often need to be opened with the sphenoidal sinus. No mention is made of the simple opening through the ordinary nasal passages, and the authors do not apparently consider this an efficient method of treatment. There is a good table of contents, but no index; a full and useful bibliography is appended.

TUBERCULOSIS.

Development of Our Knowledge of Tuberculosis. By LAWRENCE F. FLICK, M.D., LL.D., Co-Founder of the Rush Hospital for Diseases of the Chest, &c., Philadelphia. Published by the author at 738, Pine-street, Philadelphia. 1925. Pp. 783. $7.50.

Dr. Flick has produced a monumental volume on the history of tuberculosis, beginning with the Code of Hammurabi written 2250 B.C., and ending with the work of the British and German Royal Commissions on Tuberculosis at the beginning of this century. The amount of material amassed is large, and as tuberculosis meant a different thing to the physician in different epochs of history, the value of the material collected together must obviously vary a good deal. Dr. Flick suggests that the Hebrew race was one of the first to become immunised to tuberculosis and that this racial immunisation gradually extended westward through the Greek race to the Romans. References to tuberculosis in the Hippocratic writings are dealt with fully, as also is the work of Galen. Between Galen and Sylvius there was little real advance in our knowledge of this disease, but from the days of Sylvius onwards the amount of writing on the subject has been truly prodigious. Dr. Flick gives extensive quotations from Morton's "Phthisiologica," and devotes chapters to Sydenham, Boerhaave, Mead, Reid, Stark, and others of the eighteenth century. The latter part of the eighteenth century produced new schools in the work of Baillie, the Hunter brothers, and the early morbid anatomists on the one hand, and in the work of Auenbrugger, the inventor of percussion, on the other, thus creating a new conception of tuberculosis. Throughout the early part of the nineteenth century this work, helped greatly by Laënnec, went steadily on, culminating in the

introduction of the compound microscope which made possible the work of Virchow and cellular pathologists, and subsequently that of Pasteur, Koch, and the bacteriologists.

The book has little to say about the statistical side of the development of our knowledge of tuberculosis, and we note with regret the absence of references to the bills of mortality which cast such illuminating light on the study of disease in the early nineteenth century. Nor can we find mention of the work of Pott, Addison, Bodington, and Cornet, all of whom made no mean contribution to the study of tuberculosis. The real difficulty in such a history is that of assimilating and sorting the mass of information, tracing the development of men's minds, and the influence of the various great schools of medical learning through the centuries. The author has not always been quite successful in this respect. The book is, however, a most laborious production and contains much important matter, including long quotations from standard texts.

MIDWIFERY.

Third edition. By Ten Teachers. Under the direction of COMYNS BERKELEY, M.D., M.C. Camb., F.R.C.P. Lond. Edited by H. RUSSELL ANDREWS, COMYNS BERKELEY, and J. S. FAIRBAIRN. London: Edward Arnold and Co. 1925. Illustrated. Pp. 778. 24*s*.

"Ten Teachers" has already made itself so familiar and welcome a text-book of midwifery that it is not surprising to receive a third edition within eight years of the first. No introduction of the book is needed. It belongs to the increasing group of joint compilations, and the greatest pains have been taken to reap the benefits and avoid the disadvantages of this method of book-production. The present edition has been thoroughly revised and the illustrations enriched by a number of new skiagrams. So much work has been done recently on metabolism that the chapters on toxæmias of pregnancy have been largely rewritten and preceded by a brief but very clearly expressed review of normal protein and fat metabolism. Since the last edition the Section of Obstetrics and Gynæcology of the Royal Society of Medicine have investigated the subjects of eclampsia and Cæsarean section and their results are incorporated. The chapters on infant feeding have been remodelled and constitute a clear and concise exposition of the most up-to-date views on this difficult subject.

The whole work is written from the point of view of the student and practitioner and provides just those practical details that the latter needs in his everyday practice. To those who do not already know it the book can be cordially recommended.

THE CHANGING SCHOOL.

By PHILIP BOSWOOD BALLARD, M.A., D.Litt., Author of "Mental Tests," &c. London: Hodder and Stoughton. 1925. Pp. 332. 6*s*.

IN Dr. Ballard's survey of evolution in educational methods one finds the product of long experience and a progressive spirit, with a humour that possesses the essential quality of unexpectedness. A chapter on Floggers, Ancient and Modern, is not without sympathy for the difficulties of the flogger, and draws a satisfactory picture of the change that has taken place since both parent and pupil felt and showed hostility to the work of the London elementary school teacher. Such live questions as the theories of punishment, the utility of formal training, and the teaching of the classics are handled with ample discussion on all sides. Among many fresh points of view is the admission that scholars of to-day are less accurate than those of the 'eighties, with the defence that accuracy in the past was gained at the expense of other useful qualities. Certain chapters indicate that Dr. Ballard writes primarily for teachers, but the book is not pedantic, and provides useful reading for those of us who note, perhaps with misgiving, the disappearance from the school curriculum of such honoured acquaintances as the works of Euclid, or who find that in some other study the young folk of to-day no longer follow paths that we once regarded as hallowed by tradition.

JOURNALS.

ANNALS OF MEDICAL HISTORY. September, 1925. New York: Paul B. Hoeber. Pp. 205–318. $2.50.—This, the third number of Vol. VII., contains many interesting articles. The first, by Sir Humphry Rolleston, deals with the life and works of Caleb Hillier Parry, the well-known physician of Bath, distinguished not only by his scientific knowledge, but also by his having been the father of William Edward Parry, the famous Arctic explorer. Caleb Parry received his medical education in Edinburgh, graduating as M.D. in 1777, his thesis being a dissertation upon hydrophobia. In 1778 he married, and in the following year settled in Bath. He soon became successful, and some ten years later was making from £300 to £600 a month. One of his most remarkable pieces of work was a description, published after his death, of eight cases of exophthalmic goitre under the heading "Enlargement of the Thyroid Gland in Connexion with Enlargement or Palpitation of the Heart." For the last six years of his life he was crippled by the effects of a cerebral hæmorrhage, but although his speech was much affected his mind remained clear.—Of other papers, Dr. W. G. A. Robertson contributes one upon the "receipts" of that odd personality Sir Kenelm Digby, privateer, courtier, an original member of the Royal Society, and writer on medicines.—Dr. D'Irsay and Dr. H. B. Allyn write respectively upon the Black Death and the Mediæval Universities, and the Social and Economic Results of the Black Death. As regards the first paper we think that Dr. D'Irsay is in error when he says that the "Universities of Latin Christendom were, in the middle of the fourteenth century, in possession of the Hippocratic Corpus . . . ." There is but little evidence to show that works of Hippocrates other than the Aphorisms and the other treatises commented upon by Galen, De Prognosticis and De Regimine Acutorum, were known at the universities, even at so medical a university as Montpellier circa 1350. Incidentally, the quotation from Hippocrates given at No. 15 of Dr. D'Irsay's bibliography is so full of misprints as to be unintelligible.—Dr. Allyn's paper is interesting, but it would seem that FitzRalph's statement that there were 30,000 scholars at Oxford in his time, and that the numbers fell to 6000, must in spite of Cardinal Gasquet's apparent endorsement be disbelieved, in view of Rashdall's statements in his Universities of Europe in the Middle Ages.—Dr. J. M. Ball writes upon Ether Tragedies in reference to Morton and Wells, and above all to Dr. C. T. Jackson. Jackson suggested ether as an anæsthetic in 1846, and when he found that he had been anticipated by a then unknown country doctor, Crawford Long—who, in 1842, removed a tumour under ether—he gave Long the credit which was his due.—Mrs. Long Tayler, a daughter of Crawford Long, writes a charming account of her father.—Dr. J. M. Hayman gives the text and translation of Malpighi's treatise on the structure of the kidneys.—Among the reviews is an appreciation, well deserved, of three works by Dr. W. H. S. Jones—namely, his edition of two volumes of Hippocrates in the Loeb Library, Malaria and Greek History, and the Doctor's Oath.

REVUE D'ACTINOLOGIE. Paris. — The growing importance of actinology as a branch of medical therapeutics is ample justification for the new French *Revue d'Actinologie*, the second number of which has just been issued. It is appearing at present every three months and is published by L'Expansion Scientifique, 23, Rue du Cherche-Midi, Paris VI. In addition to numerous original articles on the technical, biological, therapeutic, and hygienic aspects of the subject, the editors contemplate including an analysis of all important publications dealing with radiation.

THE LANCET.

LONDON: SATURDAY, DECEMBER 12, 1925.

CRITICISM OF THE GENERAL MEDICAL COUNCIL.

CRITICISM of the General Medical Council has been the inspiration of articles and letters in many journals of varying status and aim during the past week. We notice appeals in the press, and we have received them at this office, that we should contribute something in the nature of a reply from this journal to the charges which have been levelled at the Council for this offence or that default, and especially for removing certain practitioners from the roll of the medical profession. If only we were allowed to submit the case of a particular practitioner to scrutiny, it would not be hard to collate the facts, as they were laid before the General Medical Council, with the wording of the relevant Acts of Parliament, and then to come to an honest decision, right or wrong, as to the justice of what the Council had done. But unfortunately those who explicitly ask for our views do not confine themselves to the alleged wrongs of a particular practitioner, or even to the exercise, harmfully in their opinion, of any specific function of the Council; nor are the concrete offences or groups of offences which may bring a practitioner under the disciplinary attention of the Council made the subject of a definite complaint. The various articles, like the letters which we have received, are not possibly susceptible of reply, because they start such a multitude of different subjects. In one article fault will be found not only with the actions or attitudes of the Council, but with its constitution and its mode of election; in another the blindness of medical leaders to the virtues of the general mass of practitioners is deplored, and a recipe is given for the production of leaders of a better sort; in another the need of advertisement is dwelt upon in the interests of the public as well as of the doctor. Some ask that the General Medical Council should be composed, to various proportions, of laymen; some that medical members of the Council should be elected by laymen; some that lay members of the Council should be nominated by different lay authorities; and some that all the Council should be elected by the general vote of the various medical activities represented and not by the governing bodies of university faculties, colleges, and corporations. The avowedly hostile critics of the Council are so little unanimous that certain of them can be considered to have answered the accusations of others: but one abstention they display in common—they make little or no reference to the possible spread of abuses which are prevented by the statutory actions of the Council. The Council is described as a "trades-union," a "tyranny," or an "anachronism," but the fact is unacknowledged that without the procedures which the Council has adopted unconscientious doctors might either impose on the public with unwarranted claims, or provide the public with the ministrations of unqualified men, while taking fees for medical services. These procedures are of the highest public value, and in our opinion the fair and fearless way in which the necessary duties have been discharged should have earned the Council public gratitude.

The case of Dr. W. LLOYD has determined most of the recent attacks upon the Council. The case, as presumably all our readers know, is that of a qualified medical man who is held to have secured professional advantages through an article in the lay press, not, however, written by himself. A statement of the case was made in the House of Commons by Mr. NEVILLE CHAMBERLAIN last week (see p. 1259) and can be compared with the summaries of the proceedings before the General Medical Council in our own columns and in those of the *British Medical Journal*, when it will be seen that the charge presented certain characteristics, novel in themselves, making it inevitable that a decision against the practitioner would be received with surprise by many. Now there is no action of the General Medical Council which more, and more regularly, excites adverse comment in the press than the exercise of a power which appears to make for suppression of information. This is perfectly intelligible, and this is why all the penal cases, heard by the Council, which have been or have appeared to be on all fours with the case of Dr. LLOYD, have received similar publicity, and to some extent have drawn upon the Council similar opprobrium. There are limits to the criticism of the Council, and it has not been said by anyone that there is no need, in the interests of the public, for any authority to watch over the dissemination of medical information; but when the medical profession, through the Council, supplies that authority its employment is always resented. The critics of the Council seem to consider either that the Council possesses no right to prevent any medical man from communicating any sort of article to the lay press; or that, if the Council has such a right, the right should be withdrawn until the Council is reconstituted, so that the exercise of its authority should have some public endorsement. These deductions are forcible but not logical. In the public interest there must be some way of preventing men who happen to possess medical qualifications, and therefore to be able to speak as doctors, from assuming the position of medical experts and thrusting on public attention details of new treatments, whether devised by themselves or by others. Such proceedings must do, and indeed have done, great harm, while the medical profession, as the only body able to judge of what is new and valuable, should be expected to prevent the raising of false hopes, the exploitation of methods doomed to failure, and even the undue enhancement of individual reputations. And every responsible editor on receiving a communication from a doctor to say that he has discovered a cure acts on these identical principles: he asks a medical man whom he trusts what chances the alleged cure holds out and what professional standing the contributor enjoys. There should be no doubt about the offence committed in cases where a practitioner assumes in the lay press the position of being able to serve the public in some way better than his fellows can. This form of advertisement is a public danger and must be stopped by the Council. But there is another sort of medical article which, when it is published in the lay press, appears to fall under the ban of the General Medical Council, and we admit that we regret the fact. We mean general

pronouncements on topics of health, couched in such language that the public is helped practically by reading them, and can understand the directions in which medicine can help them further. Such articles gain in value if responsible signatures are attached to them, and it is the signed medical article from the best sources which the lay press desires, quite naturally, to be able to put before readers. It is thus at one and the same time a good thing and a bad thing that medical articles should appear in the lay press with medical signatures attached, and much of the resentment which has been excited against the disciplinary decisions of the General Medical Council has been due to the non-existence of any methods of discrimination. Ought the Council to be able to exercise a discretion, ensuring that the appearance of articles of public value should not be made the subject of disciplinary supervision, while trusting both the editors and the contributors to be inspired in the circumstances by the wish to benefit the public and not to exploit the individual?

The "Warning Notice" adopted by the Council in 1923 may be held to be abused when the spread of useful information is confused with the arts of the advertiser. That is patently true; but so is it true that, if the Council should attempt to draw up rules indicating that certain articles signed by medical men can be published in the lay press without offence, while other articles, so signed, cannot receive similar treatment, charges of partiality would be immediately made, would be extremely difficult to refute, and would endanger the reputation of the Council for fearlessness—that exact fearlessness which we consider is the quality in the Council which has given rise to so much irritation. It has been indicated that the kind of medical article which might well be published for the general benefit would naturally be written by a leader of the medical profession, and that is obviously the kind of article which the better lay journals require for their readers. Any rules under which these articles should appear to be exempt from the adverse attitude of the Council would be interpreted as ensuring for well-known members of the medical profession a measure of publicity and a security from reproach which are denied to less prominent people. For this reason we cannot believe that any alteration in the practice of the Council could meet the dilemma satisfactorily; while no rules will ever try out the hearts of men. Nor do we see that the appointment by Parliament of any committee of inquiry would assist either the public or the medical profession in the particular circumstances we have been dwelling upon. But the convenience of such an inquiry would be the public ventilation of the circumstances that have led to so much public heart-stirring. If some committee possessing the public confidence, and with a definite category of references, were to make a pronouncement, the disciplinary functions of the General Medical Council might cease to provide regularly an outburst of criticism, which is not confined to the Council, but includes practically the whole medical profession in charges of intolerance.

VETERINARY RESEARCH AND HUMAN MEDICINE.

THE story of a South African farm could, it is said, have been told in three words—drought and locusts. But this is by no means the whole of the story; the stock-raiser of experience could add many more chapters on the vegetable and animal pests which used to render his calling such a precarious one. Indeed, most of the minor horrors of farming seem to be rife in South Africa; and yet on the whole the farmers prosper, and the amount of land under cultivation and of stock being raised increases every year. The explanation lies in the help in combating pests and diseases given to the farmer by the Department of Agriculture of the Union through its Division of Veterinary Education and Research. The main laboratories and experimental farms of the Division are at Onderstepoort, near Pretoria, and we give elsewhere in this issue some account of the manner in which a triple function of routine, research, and education is there fulfilled. Anyone who notes the scope of the activities of the Division must be impressed with the important part played by veterinary science in the life of the subcontinent; but however great the needs of the community, it is hardly likely that the institute for veterinary research at Onderstepoort would have been expanded to such a scale had it not been for the fortunate coincidence of the man capable of developing it and the Government capable of appreciating the man. PAUL KRUGER recognised the genius of ARNOLD THEILER and gave it full play; later, MILNER, BOTHA, SMUTS, and HERZOG pursued the self-same policy. The result is an institute of comparative pathology where is being carried out research of importance not only to veterinary but also to every other branch of scientific medicine.

The extraordinary value that work under these conditions may have is easy to perceive. The student of human diseases sooner or later turns to the experimental method. It is inevitable that this should be so. The time must come when the question arises, What would happen if such a reaction were modified in such a way? and the experimenter seeks to produce infection of a laboratory animal. But he is then met with the very reasonable criticism that he is no longer dealing with disease as it naturally occurs. The infections produced in his laboratory animals differ fundamentally from their very inception from those occurring in human beings; the whole course of the disease is different, and the fallacies inherent in this method of investigation may be so great as to render it worthless. It is for this reason that the necessity for the closer study of diseases occurring naturally in animals is so urgent. The elucidation and cure of such diseases as horse-sickness, lamziekte, quarter evil, and the like is of immediate practical importance, but it is still more important for the veterinary scientist to study by the experimental method disease as it occurs naturally. If he wishes to produce active immunity he can work with attenuated living viruses. If he wishes to investigate that enormously important subject the infections of mucous membranes, he has unimpeachable material at hand; he is not reduced to swabbing a rabbit's throat with pure cultures of streptococci, or feeding the creature with bile and typhoid bacilli.

It is thus from a broader point of view than the merely utilitarian that the development of a living science of comparative pathology is so desirable, and it is Sir ARNOLD THEILER'S peculiar merit that he has had the vision to appreciate this. Onderstepoort was founded to meet the needs of the farmers, and nothing is allowed to interfere with the routine duties of the institute. But always the ideal of research has been upheld by the director. To him no routine investigation is so dull and hackneyed that it ceases to ask a question; no problem is either too difficult or too elementary to merit consideration. The whole institute is permeated with his controlled enthusiasm, and it is a research centre of which any country would be proud.

EPSOM COLLEGE.

DR. RAYMOND CRAWFURD, as Chairman of the Council of Epsom College, addresses our readers with eloquent pertinacity on another page. In dealing with the progress of the College during the past year he acknowledges the support of many additional annual subscribers, and hopes that in the year to follow a still larger number of new supporters may present themselves. We share his hope, for the College does splendid work, and a large subscription list must be always the backbone of the resources necessary to maintain institutions of which it is a fine example. Good fortune in legacies and benefactions is to be welcomed as implying public confidence, but legacies necessarily are accompanied with the loss of good friends, while benefactions when they arrive, though they possess the charm of unexpectedness, have the drawback, from a treasurer's point of view, that they cannot be counted upon. A large and regular income from subscriptions is the ideal of every treasurer, so that plans for improvement and development can be entered upon with the surety that implies not only a successful but an economical carrying-out. Dr. CRAWFURD indicates many directions in which Epsom College is developing and in which provision should be made for further material improvements, but of these none can appeal more directly to medical men than the proposal to build a new infirmary for the school. The present infirmary is not constructed according to the requirements either of modern medicine or up-to-date nursing, and, moreover, is not economical to run. The provision of a new infirmary would cost from £15,000 to £20,000, a serious sum for the contemplation of the College authorities, but one which wider support from the medical profession would soon render available. The best provision for the sick in a population like that of Epsom College, which is increasing under steady success, is a responsibility upon the medical profession which will be recognised readily. It is a point worth noting, moreover, that the present infirmary when vacated would give accommodation to 45 more boys, an addition to the total number of the school which would be a financial economy, bringing in more money and entailing no commensurate cost; admission would also be provided for some 10 per cent. of a gratifying but over-large waiting list.

We may be repeating words which we have written in substance on previous occasions, when bringing before our readers the claims of Epsom College, but it should never be forgotten that the greatest anxiety which the medical man may have is in regard to the education of his children. He pursues a profession which even after an extended period of practice may not enable him to make large savings; further when success arrives, outgoings maintain a proportion which renders wealth a rare occurrence; and any physical incapacity may remove all chances of practice. Everything should be done to ensure education for the children of our colleagues, and that provided at Epsom need fear no comparisons with the work of other big public schools.

ORDER OF ST. JOHN OF JERUSALEM AND THE BRITISH RED CROSS SOCIETY.—At the last meeting of the Joint Council the resignation of Dr. F. N. Kay Menzies as Director of the Council's Hospital and Medical Services Department, in consequence of his appointment as Medical Officer of Health for the County of London, was accepted. At the same meeting Mr. R. H. P. Orde, B.A., was appointed Acting Director of the Hospital and Medical Services Department.

Annotations.

"Ne quid nimis."

CONSOLIDATION OF WORKMEN'S COMPENSATION ACTS.

THERE is good ground for hope that a Bill to consolidate the Workmen's Compensation Acts will pass through Parliament before Christmas. Anyone who tries to work at present with the original Act of 1906, overlaid and interwritten with its many subsequent amendments, has a difficult palimpsest to decipher. Moreover, the whole subject has now emerged from the tentative and experimental state and has been shaped by experience into something recognised as workable and reasonably permanent. It was time, therefore, to restate the law in a convenient form. The new Bill clears away the 1906 Act, the two Silicosis Extensions of 1918 and 1924, the Illegal Employment Act of 1918, and most of the amending statute of 1923. The principal surviving passages of the last-named enactment which the Bill does not propose to repeal are the provisions for amendment (by the Registrar of Friendly Societies) of the scales of compensation under certified schemes, certain provisions as to notification of accidents, and those as to first-aid and ambulance arrangements—these last being matters which belong less to the law of workmen's compensation than to the law of factories and workshops whereof the amendment and consolidation are long overdue. So far as we have been able to check it, the Bill appears to reproduce the existing law with fidelity and to add nothing that is new. Only one minute alteration is discoverable. The Workmen's Compensation (Silicosis) Act of 1918 empowered the Home Office to set up schemes for the payment of compensation by employers of workmen in specified industries involving exposure to silica dust, and added that the Rules Publication Act should not apply to such schemes. The exclusion of the Act as a whole appears to have been an oversight. What was presumably intended was merely that Section 1 of the Rules Publication Act (prior publication of proposed schemes) should not apply. Section 3 (printing and official publication of schemes) was not meant to be ruled out; at any rate, the Home Office has always complied with its provisions. This alteration in the Bill is trivial and technical; we cite it only to show that apparently the sole change in the Bill is the correction of a minute error. The Bill will not pass through Parliament at this crowded period of the session unless it is treated as a non-contentious measure. It will not be so treated unless the fact is known that it merely repeats the law and neither introduces nor immediately invites any substantial change.

SCIENCE AND RELIGION.

THE difficulties between science and religion are no longer of the sort which led self-confident mechanists and those who believed in the verbal truth of Genesis into a hopeless impasse, and no one is much concerned nowadays about the Flood, nor indeed about a good many other things which have from time to time been supposed to constitute the fundamenta of sound religion. To some it even seems that there is now no substantial disagreement in outlook. Organised religion has given up most of its dogmas which came to be at flat variance with ascertained fact, and there is little or no practical difficulty in any man being a sincere physicist and a sincere churchwarden. Easy minds can satisfy themselves with the reflection that religion and science deal with different and discrete compartments of human experience, and that there is no need to mix them up. But this simple pragmatism is shirking what is still a real difficulty. Religion and science both claim, and must needs claim, to be in the end a

complete explanation of the world. No dualism will satisfy, and the discussion has developed now into the question whether a spiritual or a physical conception more nearly expresses reality; it progresses into the question whether the two conceptions are necessarily different and, most significant of all, those who take part in it are nearly always trying to find a basis of unification and common agreement rather than to emphasise points of dialectical divergence. At the moment, indeed, there seems to be less disagreement among those who try to cross the border in either direction than among those of either persuasion who keep to their own side of the line; neither science nor religion are harmonious wholes. Their relations to human experience are dealt with from a variety of aspects and with some differences of opinion in a volume[1] recently published. Earl Balfour says little more than that the truth is very uncertain, but the rest of the essays are all solid and provocative reading, and the general summary and discussion with which the Dean of St. Paul's concludes is most helpful. Dr. Charles Singer provides an interesting historical discussion, and the editor, Mr. Joseph Needham, contributes an amusing claim for the supremacy of biochemistry. We are inclined to regard Prof. Eddington's article on the Domain of Physical Science as the hub of the whole discussion; it cannot be followed in detail here, but the pith of it is the suggestion that the mind is more important than has been supposed in prescribing the nature and laws of the physical world, and that by its selection of values the mind may create its physical environment. It looks as if we shall soon progress to a more adequate conception of the inanimate, animate, and spiritual worlds as forming a coherent and consistent whole. Mr. E. Haigh, who has for many years been a teacher of physical science, has written a much slighter, more elementary book[2] on the same theme and indicating the same conclusions. A good deal of the book is made up of quotations from such a variety of writers as testifies to the width of the author's reading, but the method is irritatingly discontinuous to the reader, and Mr. Haigh would have done better to state his argument in his own words. His thesis is that there is no disharmony between religion and science, and that any attempt sharply to separate the physical and psychical fields of experience is unsatisfactory.

LANOLIN IN THE TREATMENT OF EXTENSIVE BURNS.

THAT "lanolin is the application which gives best results in the treatment of extensive and deep burns" is the opinion of Dr. Bellet,[3] médecin-en-chef in the French Navy. Serving in the great Saint-Mandrier Hospital at Toulon, he has had much experience of burns, especially in 1924, when he had under his care the 13 victims of a cartridge explosion in a casemate of *Patrie* in May and 10 men scalded when a steam-pipe burst on board *Courbet* in August. Other forms of treatment he considers unsatisfactory. Picric acid sometimes causes irritation and gives pain later, though it soothes at the first dressing. "Gomenolised" oil, the French equivalent for eucalyptised oil, drains away and leaves adherent dressings. Ambrine is good, but dressing takes a long time and healing does not occur so soon as with lanolin. Pure lanolin is a little irritating in summer, and about 20 per cent. of vaseline should then be added. Its use for the treatment of burns has long been recommended by French surgeons and was fathered by Inspector Girard, who advised Dr. Bellet in the cases reported. The results recorded were satisfactory. Of the ten men from *Courbet* who were scalded by super-heated steam, three succumbed (on the first, second, and tenth days), but the remainder were cured in six weeks, and discharged without contractions, awkward adhesions, scars or limitation of movements. The pain usually involved in dressings was noticeably absent and lesions on the head, face, and hands were sometimes cured within 20 days. Dr. Bellet gives the following account of his procedure: At the first dressing the burnt surfaces and a wide area around must be disinfected. The skin is always dirty, and compresses of spirit-soap will clean it. These are surprisingly well borne at first, and when they have done their work the burns are washed with much boiled water or weak permanganate solution. Blisters are opened, dead tissue is cut away—saving all the epidermis possible—and the wound is washed with normal saline and dried with sterile gauze. Finally, compresses soaked in sterilised lanolin with 20 per cent. of vaseline kept fluid in a water-bath, are adjusted over the burns, and over them is placed gauze and absorbent cotton. Large dressings should be prepared beforehand, to save time and shock to the patient. Gloves, instruments, and dressings must all be sterilised as if for a surgical operation, and this must, of course, be done also at subsequent dressing. At first the applications are changed daily, but there is no pain or bleeding, for they do not stick. After the dressing is removed, and any sloughs taken away, a washing with weak permanganate is followed by another with normal saline; the area around is cleaned with alcohol or ether; the whole is dried, and the dressing is re-applied. If all has been done well, the wounds are dry. The improvement under lanolin is said to be rapid; there is little discharge, and sloughs are quickly cast off. The wounds soon have rosy granulations and in a week bluish islands of epithelium begin to appear and a healing edge to form. And there is generally no surrounding inflammation nor pus.

TUBERCULOSIS IN CHILDREN.

THE statistical work of Mr. Godias J. Drolet is well known in this country, and his recent review[1] of the mortality in childhood during the past quarter of a century in New York City deserves attention. Mr. Drolet states that in 1868 1191 infants died of tuberculosis per 100,000 children under 1 year of age in New York City. Thirty years later, in 1898, this mortality-rate was already down to one-half, or 609, and by 1923 it had been reduced to 94 per 100,000. Taking the deaths from tuberculosis among children up to the age of 15 years, it is shown that the mortality-rate of 136 per 100,000 in 1898 had been reduced to 33 per 100,000 in 1923—in other words, a reduction of 76 per cent. Tuberculous meningitis causes half of these deaths, and pulmonary tuberculosis comes next in the list. Another fact emphasised in the statistics is that abdominal tuberculosis in childhood has not been responsible for such a high mortality as in Great Britain. During the past two years there have been no deaths from tuberculous peritonitis in childhood in New York, which is striking in view of the fact that 98 per cent. of New York milk is pasteurised. Mr. Drolet attributes the more effective prevention of tuberculosis in childhood in America first to the spread of knowledge about contagion, and, secondly, to the improvement in preventive measures, such as increased hospital accommodation, systematic disinfection, and the pasteurisation of the milk-supply, all of which have diminished the risk of massive infection of children with *B. tuberculosis*.

In the same journal[2] Dr. B. S. Herben and Dr. M. A. Asserson make a statistical study of tuberculous meningitis from birth to the age of 15 years, touching first on the vexed question of the portal of entry in tuberculous meningitis. In the series of 115 cases dealt with the authors obtained definite history of contact in 56 per cent., a history of probable

[1] Science, Reality, and Religion. Essays by the Earl of Balfour, B. Malinowski, C. Singer, A. Aliotta, A. S. Eddington, J. Needham, J. W. Oman, W. Brown, C. C. J. Webb, and W. R. Inge. Edited by Joseph Needham. London: Sheldon Press. 1925. Pp. 396. 12*s.* 6*d.*

[2] Religion and Natural Science. By E. Haigh, M.A., B.Sc. London: Student Christian Movement. 1925. Pp. 170. 3*s.*

[3] Arch. de Médecine Navale, 1925, iii., 199.

[1] American Review of Tuberculosis, 1925, xi., No. 4.

[2] Ibid., 1925, xi., No. 3.

contact in 18 per cent. and suspicious history in 10 per cent., and no history in 16 per cent. They consider the theory of milk infection to be untenable in these cases because in New York City 98 per cent. of the milk-supply is pasteurised. The influence of tenement houses, of diseases such as measles and whooping-cough, and of sex and of age are all discussed as ætiological factors. The fact that about 9 per cent. of the cases were preceded by tonsillectomy unassociated with any other disease leads the authors to the conclusion that further research on this line is necessary. The greatest number of cases of tuberculous meningitis in any single age-period was found in children between 1 and 2 years of age, whilst, in terms of absolute numbers only, outside of the American stock there were more cases of tuberculous meningitis amongst the Italians than in any other racial groups comprised in the series. One of the most interesting sections of this study is that which deals with the investigation of housing conditions as an ætiological factor. This lays emphasis on a very valuable point. The part played by zymotic diseases as a predisposing cause is, of course, well recognised, but the connexion with operation for tonsillectomy is an isolated factor in the inquiry which certainly needs further investigation.

At the moment it would appear to be useless to speculate on this point without further data, and especially without controls. That the mortality-rate in tuberculosis in childhood has fallen with such marked rapidity during the last quarter of a century is a demonstration of the value of the antituberculosis campaign in New York.

PERMANENT CARE OF THE FEEBLE-MINDED.

IN the history of social progress in the twentieth century the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded[1] occupy an honourable position. They were pioneers in obtaining recognition for the fact that inborn mental defect is a permanent condition requiring life-long care, and their colony at Sandlebridge was the first of such establishments founded in England to meet a need even now inadequately supplied. On the occasion of the opening of a new recreation hall in the earlier part of this year reference was made to the remarkable beginnings of a work which is still incomplete. Twenty-eight years ago Miss Mary Dendy, now president of the society, set out to collect evidence which would induce the School Board for Manchester to adopt the then tentative experiment of special schools. First working single-handed, and later with the help of the late Dr. Henry Ashby, she discovered 500 defective children actually in the class-rooms. A further series were so grossly afflicted that school attendance had been excused. "Most of these cases were very severe, and many were pitifully neglected. One lad we found tied up in a cellar naked and howling."

By the time the survey was completed it was realised that special schools were not going to solve the problem. A permanent home was needed and protective legislation to keep the children safe and so to safeguard society from them. The statement of these aims seems obvious to the point of triteness to-day, but in 1897 the opposition aroused was fierce and almost universal. Even mental specialists considered that it was unjustifiable to put a stigma on any child by saying that he could not become normal, even if this was the obvious truth. From discouraging beginnings, however, indomitable pluck and hard work have built up the flourishing colony of to-day. Sandlebridge now shelters 212 inmates over 16 and 108 children. Over 200 adults have been there from an early age, some of them over 20 years. As all who have visited the colony know, they live under admirable conditions. A large farm and market gardens not only supply the older men and boys with a healthy and satisfying occupation, but provided produce for the institution to the value of over £2000 in 1924. Both males and females are trained in a variety of skilled trades which utilise the gifts of all, and make the colony almost self-contained as regards labour, if not financially self-supporting. The school has been extended during the year, but the pressure in places is very great, and speaks eloquently of the need for similar institutions elsewhere. It is disappointing that local authorities should still refuse to exercise their right of maintaining defectives after the age of 16, even though, as in two cases quoted in this report, the lads are of proved criminal tendencies. The instinct of the ordinary man, who revolts against the idea of permanent confinement and demands that the experts should prove their case in every instance, is none the less a sound one. The appeal of Sandlebridge and other colonies will be all the stronger when it is realised that they are required for selected cases only out of the feeble-minded population, and that special schools and home supervision will suffice for the majority. In view of the high reputation of this colony and the indispensable work it is doing, a fall in subscriptions of over £265 for the current year is regrettable. A suggestion that the debt of £3000 incurred for a much-needed recreation room and additional beds should be paid off in commemoration of Miss Dendy's long years of service is worthy of wide support.

[1] See Twenty-sixth Annual Report for 1925 of the Society, 72, Bridge-street, Manchester.

ENCEPHALITIS FOLLOWING VACCINATION.

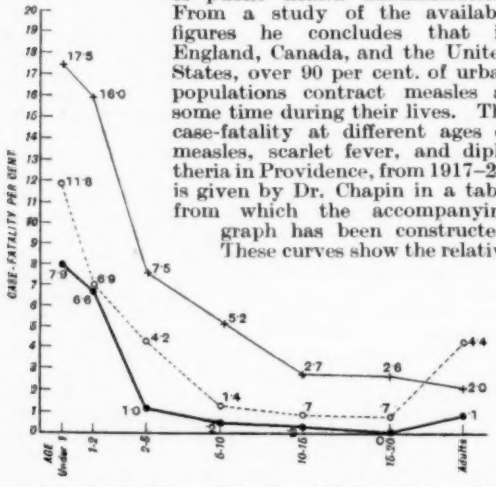
AT a recent meeting of the Académie de Médecine of Paris Dr. F. S. van Bouwdyk Bastiansee[1] and Dr. Terburgh, of The Hague, in collaboration with Dr. Byl, of Utrecht, and Dr. Levaditi, of Paris, made an important communication dealing with the occurrence in Holland of encephalitis following vaccination. During the course of 18 months there had been 34 cases of which 14 were fatal. The first case developed in March, 1924, and was followed by the second in April, the third in July, and five more in September. The next two occurred in February, 1925, the largest number in one month—viz., 16—being notified in March, followed by seven in April, and the last at the end of June. The clinical course was as follows. After a period ranging from 9 to 15 days after vaccination, the interval in the great majority being 10 or 11 days, an acute and violent cerebral condition developed. The first symptoms were vomiting and headache followed by increasing drowsiness. The following days convulsions appeared affecting one side or one extremity only. Babinski's sign was present in all cases in which it could be investigated. In only one case which ended fatally was there any paralysis—viz., hemiparesis accompanied by paresis of the frontal branch of the facial nerve. In the cases which recovered the acute stage lasted from 7 to 15 days. There were no sequelæ. The condition was obviously one of encephalitis, as meningitis could be excluded by the normal condition of the cerebro-spinal fluid, poliomyelitis by the absence of paralysis, and tetanus by the absence of trismus, convulsions, and the characteristic facies. The disease differed from epidemic encephalitis and the ordinary encephalitis of children in the following respects. The great uniformity of the symptoms as contrasted with the variable picture of epidemic encephalitis. The shortness of the acute stage, the absence of paralysis, particularly of the eye muscles, the presence of Babinski's sign, and the absence of sequelæ were distinctive. In two cases in which the brain was examined histologically the lesions were chiefly localised in the white substance, whereas in epidemic encephalitis they are mainly situated in the grey substance with a predilection for the mesencephalon. In some cases the vaccination pustules were very pronounced, but as a general rule the vaccinal reaction was normal. The lymph employed in the 34 cases did not come from the same calf but from ten different animals, and the lymph

[1] Bulletin de l'Académie de Médecine, 1925, xciv., 815.

used for vaccinating these animals was derived from five different sources, two strains being of Dutch origin, one from Berne, one from Hamburg, and one from the Dutch Indies. In discussing the nature of the encephalitis the writers regard the possibility of a vaccinal encephalomyelitis as unlikely, as the vaccine did not show any exceptional neurotropic affinity, and numerous inoculations of rabbits with the patients' cerebro-spinal fluid remained negative. A more likely hypothesis appeared to be the activation of a dormant virus in children who were carriers of epidemic encephalitis. This view was supported by the following facts: (1) Most of the cases occurred at a season of the year when a recrudescence of epidemic encephalitis was to be expected. (2) Attempts to transmit the disease to animals failed, which is the rule in epidemic encephalitis. There was a further possibility of the affection in question being caused by some unknown virus which was capable of producing a particular form of encephalitis under special conditions.

SOME EPIDEMIOLOGICAL STUDIES.

RECENT issues of the *American Journal of Hygiene* contain valuable contributions to epidemiology. In the September number Dr. C. V. Chapin, the distinguished veteran health officer of Providence, R.I., reviews the incidence of measles in that city, 1858–1923. Recently there has been a periodicity of a little over two years, but longer intervals were experienced in the earlier period. Dr. Chapin's comparison between sickness and mortality curves since 1907 clearly shows the inutility of mortality statistics for purposes of public health administration. From a study of the available figures he concludes that in England, Canada, and the United States, over 90 per cent. of urban populations contract measles at some time during their lives. The case-fatality at different ages of measles, scarlet fever, and diphtheria in Providence, from 1917–24, is given by Dr. Chapin in a table from which the accompanying graph has been constructed. These curves show the relative



Experience in Providence, R.I., of case-fatality of three chief children's infections.
Diphtheria: upper (continuous) line. Scarlet fever: middle (dotted) line. Measles: lower (continuous) line.

importance as causes of death at different ages of measles, scarlet fever, and diphtheria, and, when checked by a separate statement of the actual number attacked by each disease, indicate the scope of preventive medicine in respect of each disease.

In the same number of the journal is an account of an outbreak of 116 cases of scarlet fever due to ice-cream, traced to a person engaged in the process of manufacture, who was suffering from scarlet fever at the time. A filtrate prepared from a culture of hæmolytic streptococci, isolated from this ice-cream maker, gave typical reactions on persons known to be Dick-positive.

The November issue contains a study of multiple cases of infantile paralysis in 253 families. A large proportion of the so-called secondary cases were found to arise from a source common to them and to the respective primary cases, while a much smaller proportion of secondary paralysed cases in the same family, which occurred within 10 to 18 days after the primary cases, can be regarded as probable true secondary cases. It is inferred that the period of incubation of the disease varies between 10 and 18 days, and that the search for the source of infection should centre round about the fourteenth day before the onset of acute symptoms. It would appear also that the period of greatest infectiousness is within the first three or four days of the acute stage of the disease. The investigators, Dr. W. L. Aycode and Dr. Paul Eaton, make a comparison of multiple cases in households of measles, scarlet fever, and infantile paralysis.

MYOMECTOMY FOR FIBROIDS.

IN an article recently published in our columns[1] Mr. Victor Bonney described myomectomy as the treatment of election for fibroids. By his definition this means that he considers conservation of the uterus the ideal to be aimed at whenever the organ, apart from the tumours, is reasonably healthy. Such an ideal is probably present in the mind of most gynæcologists confronted with a case of fibroids in the child-bearing period; but technical difficulties, uncertainty about the risk of death, and a doubt whether a functionally useful organ may be preserved without risk of recurrence of the growths often sway the mind in favour of hysterectomy. Myomectomy is very frequently done, of course, where there are only one or two fibroids discovered, and these are submucous; but its exponents are not satisfied with this limited use. In the hands of Mr. Bonney good results are undoubtedly obtained, and his contributions to the literature of the subject and the excellent technique and instruments he has evolved will do much to make the operation popular. In a paper read at a meeting of the North of England Obstetrical and Gynæcological Society on Oct. 16th, Dr. Leith Murray, of Liverpool, also gave an encouraging account of 60 cases treated by myomectomy, and deplored the fact that so large a number of women suffer removal of their uterus when it might be saved. It may be objected, however, that the very expert operator who has developed a special technique may get exceptional results, and that the procedure is not one for everyday use. The question of mortality-rate is somewhat vexed at present. In Mr. Bonney's series of 220 cases the rate was nearly 2·1 per cent., which, he considers, compares favourably with that for hysterectomy. Dr. Arthur Giles, however, disputes this view, and states that although he has done 203 myomectomy operations (mainly in women under 40) with but three deaths, his death-rate for the last 1000 hysterectomies has been only 0·6 per cent. Taking also into consideration the possibility of recurrence, he thinks that hysterectomy is certainly the better operation after the child-bearing age is over. At the discussion following the reading of Mr. Bonney's paper at the Royal Society of Medicine, London, at which Dr. Giles made these comments, Lady Barrett said that she had commonly found microscopic myomata in uteri which contained multiple seedling tumours, especially in women of from 30–36 years of age, and that an attempt to remove the seedling tumours would leave the microscopic ones to grow later. But Mr. Bonney considers the fear of recurrence an unsubstantial bogy. The seedling tumour is, he thinks, probably formed much earlier in life than has hitherto been believed—probably in the 'twenties—and the formative agent, whatever that may be, ceases to act after a period. There is at any rate this to be said, that seedling fibroids may not interfere with the physiological functions of the uterus, and myomectomy, which is not effectual in removing all the growths, may tide the patient over till she has passed the child-bearing age, after which the radical operation may be performed. Dr. Murray is convinced that a uterus

[1] THE LANCET, Nov. 21st, 1925, p. 1060.

much mutilated at the operation may undergo involution and heal with a negligible risk of weakness in any future pregnancy, whilst the sentimental value of the conserved uterus and its effect on the later history of the patient is certainly very considerable. All the authorities are agreed that extensive myomectomy may be followed by pregnancy, and that the operation can be done without producing abortion in pregnancy. Dr. Giles has done myomectomy in 18 pregnant women, all but one of whom went to term. But the comment of Mr. Gordon Luker that rest and sedatives are nearly always effective in relieving the symptoms of fibroids in pregnancy may well be borne in mind. Many women do not want children, and until it is proved that no extra risk is incurred by the extended operation the point of view of the patient is obviously very important.

UNIFICATION OF POWERFUL MEDICAMENTS.

THE Second International Conference on the Unification of the Formulæ of Powerful Medicaments was held at Brussels from Sept. 21st to 29th last, when Sir Nestor Tirard represented the General Medical Council, Mr. Edmund White the Pharmaceutical Society of Great Britain, and Dr. G. F. McCleary the Ministry of Health. Prior to the Conference the British delegates held several meetings to discuss the programme submitted, and to draft a document representing their views. The Conference was attended by some 50 delegates sent from 27 powers, several of whom had forwarded reports upon the programme. These were circulated and were reported upon by special committees, and were then discussed at full meetings of the Conference. Of the ten questions in the programme to be considered, one relating to international regulations for the sale of narcotic drugs was withdrawn, as this subject had already been dealt with at a conference of the League of Nations. The other questions were discussed, with results which were embodied in a series of resolutions, of which the more important were these. The Conference advised the recognition of biological methods of standardisation which have been or may be recommended by the Health Section of the League of Nations. It approved of the formation of an International Secretariat for the unification of pharmacopœias, while recognising that the conditions of its establishment must be determined by the League of Nations. Similar reservations applied to the proposed formation of two other international committees for the investigation of assay processes and of methods for making galenical preparations. The British delegates, while in general agreement with the recommendations of the Conference, have notified certain reservations in their report to the Government. These reservations deal with methods of estimation of fluid preparations, with some of the proposed standards, and with some of the proposed alterations in nomenclature. The proposals remain inoperative until officially accepted by the several Governments. It may be said, however, that the nomenclature proposed by the Conference for international adoption does not differ materially from that of the First International Conference and follows closely that of the British Pharmacopœia.

PUBLIC HEALTH ADMINISTRATION.

THE whole question of the Poor-law was considered by a Royal Commission appointed in 1905, which reported in 1909. Majority and minority reports were made, differing on important points, and in 1917 a committee known as the Maclean Committee was appointed "to consider and report upon the steps to be taken to secure the better coördination of public assistance in England and Wales and upon such other matters affecting the system of local government as may from time to time be referred to it." This committee succeeded to a great extent in reconciling the majority and minority reports of the Royal Commission. It recommended the abolition of the boards of guardians and the transfer of their functions to local authorities—normally county and county borough councils—on certain stated lines. The Maclean Report was accepted by the Government in 1919, and last May the House of Commons accepted without a division a resolution to the effect that legislation on the lines of the Maclean Report should be passed, including "a complete absorption of the existing Poor-law authorities and their functions in the county, borough, and district councils." On that occasion the Minister of Health made it clear that, while he accepted the principle of the resolution, he must not be understood as accepting the whole of the proposals of the Maclean Report. He added that it was the intention of the Government to consider the whole question anew, and, following the precedent set in rating and valuation, to discuss it fully with all the local authorities concerned.

Certain provisional proposals have now been circulated from the Ministry of Health to associations of local authorities, the L.C.C., and others concerned as the first step in this process of discussion. Generally they have been drawn up on the lines proposed by the Maclean Committee, but greater freedom is given to local authorities in arranging for the performance of the transferred functions, while new provisions are included with respect to the financial relations between the Ministry of Health and local authorities. These provisional proposals should enable local authorities to offer constructive suggestions of a definite and concrete kind, while it should be clearly understood that the Minister holds himself at liberty to modify or vary them in any particular in the light of the comments or suggestions to which they may give rise.

EXANTHEMA MILIARIFORME.

UNDER this title Prof. M. Manicatide,[1] director of the Pædiatric Clinic at Bucharest, and his assistant, Dr. A. Schiler, report five cases in children, aged from 6 weeks to 4 years, of a new acute exanthem, which was first seen in a creche at Bucharest in 1913, and ten years later in another creche in the same city, when it formed the subject of a communication by Dr. M. Danila and Dr. Stroe to the Société de Biologie of Paris. The incubation period is probably five to eight days, and usually escapes notice altogether, as the only symptom at this time is a slight cough. The invasion, which lasts one to three days, sets in abruptly with fever, profuse sweating, and catarrh of the buccal, pharyngeal, nasal, bronchial, and occasionally conjunctival mucous membranes, though the intensity of the catarrh is never very great. The eruption lasts three to four days and consists of two stages. The first or scarlatiniform stage is characterised by a general or local erythema, and the second by a vesicular or miliariform eruption. The disappearance of the vesicles is immediately followed by desquamation, which is fine and branny in character, sometimes being hardly apparent. When there is only a single crop of rash, the disease is of short duration, but it may assume a prolonged course when the eruption appears in several crops which are either separated from one another by a short interval, or subintrant with coexistence of a scarlatiniform eruption, miliaria, and desquamation. Examination of the blood during the scarlatiniform stage almost invariably shows a predominance of the mononuclear leucocytes. During the vesicular stage the blood returns to its normal condition. General enlargement of the lymphatic glands and increase in size of the spleen are the rule. Exanthema miliariforme must be distinguished from the eruption described by American writers under the name of exanthema subitum, which it resembles by its short

[1] Bulletins et Mémoires de la Société Médicale des Hôpitaux de Bucarest, 1925, vii., 146.

invasion and catarrh of the mucous membranes, but the critical fall of temperature coinciding with the appearance of a morbilliform eruption is distinctive of exanthema subitum. The disease which exanthema miliariforme most closely resembles is sweating sickness. The latter, however, is a grave contagious disorder which affects adults, whereas exanthema miliariforme is a mild disease which attacks children only, especially infants, and never their mother or nurse. The prognosis is invariably favourable and the treatment symptomatic.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CLI.—THE TREATMENT OF SPASMOPHILIA.

SPASMOPHILIA is a term which includes infantile tetany, both in its obvious spasmodic forms of carpopedal spasms, convulsions, or laryngismus, and also in its latent forms. In the latter recognition rests on the appearance of Chvostek's facial sign, Trousseau's sign (muscular spasm on pressure over large arteries or nerves), or Erb's sign of increased excitability to the galvanic current. The condition being a symptom-complex rather than a disease the treatment must be directed towards a correction of the underlying error of metabolism or nutrition, as well as towards an alleviation of the more urgent spasmodic symptoms.

The many advances during the past seven years in our knowledge of the factors concerned in the production of spasmophilia are due directly to researches into the chemistry of the blood, made possible by recent developments of micro-chemical methods of analysis. Prior to these but little advance had been made for a hundred years. The treatment advocated in the text-books of 1920 (and even later) differs very little from the sedative, purgative, and hot-bath treatment of the text-books of 1820. It had long been known that there was a close association between infantile tetany and rickets; that tetany was peculiarly prevalent during the winter and spring months; that digestive disorders were a strong predisposing factor. But now we can add to these clinical observations certain facts gathered from experimental and chemical investigations which point us more directly towards the exact nature and causation of the condition. A preliminary re-statement of some of these will make clearer the principles of treatment to be detailed later.

Biochemical Considerations.

1. Measures which lead to an alkalosis increase the spasmophilic symptoms, while the administration of acids has a contrary effect. An example of this is the not uncommon occurrence of a case of mild latent tetany being thrown into active carpopedal spasms by the administration of large doses of alkalies, either by the mouth or in the process of blood transfusion.

2. The rôle of an alkalosis in the production of tetany is confirmed by a study of the examples of tetany in adults which may follow forced expiration and excessive vomiting. In each case the body is being depleted of acid radicles, CO_2 being washed out of the blood in "hyperpnœa tetany" and HCl being lost in the vomited stomach contents in "gastric tetany."

3. The most constant chemical fault in infantile tetany is a diminution of the calcium content of the blood. The normal level is about 10 mg. per 100 c.cm. of blood. If for any reason it falls to a level of about 6 mg. per 100 c.cm. spasmophilic symptoms will result.

4. The calcium content of the blood may be reduced under any of the following conditions: (*a*) Deficiency of calcium in the diet—e.g., use of a too dilute sweetened condensed milk. (*b*) Deficient absorption of calcium from the bowel—e.g., in intestinal indigestion where there is an excessive loss of calcium in the stools. (*c*) Lack of exposure to sunlight—e.g., a seasonal fall of calcium in the winter months has been demonstrated. (*d*) Diseases of the parathyroids.

5. Where a sufficient calcium is available for absorption a restoration of a lowered blood calcium can be brought about or helped by: (*a*) Administration of acids, especially in the form of hydrochloric acid or ammonium chloride. (*b*) Exposure to direct sunlight, or artificial ultra-violet rays. (*c*) Administration of cod-liver oil, when a diet deficient in vitamin-containing fats has been a factor. Treatment based on these points is being found by clinicians to yield satisfactory results. Readers wishing to go more deeply into the subject should consult the writings in recent years of Howland and Marriott, J. B. S. Haldane, Casparis and Kramer, Scheer and Salomon, Adlersberg and Porges, Paton and Findlay, Burns, Gyorgy, and others.

Management of a Case.

Management includes (*a*) general measures devoted to a correction of errors likely to affect calcium utilisation or produce alkalosis; (*b*) emergency measures directed towards a relief of the urgent spasmodic symptoms such as laryngospasm, convulsions, &c. In a mild or latent case general measures will suffice, and should be continued until all evidence of spasmophilia disappears. In a severe case with spasmodic symptoms the general treatment must be promptly instituted and eagerly pursued, and reinforced by some method of local and symptomatic treatment.

General Measures.—In the child's diet and digestion lies the fault in the majority of cases of idiopathic infantile tetany occurring in the winter months, the lack of sunlight acting as an "accessory after the fact." An ample supply of calcium must be provided and any errors of digestion corrected to ensure efficient absorption. After a few hours' starvation, while a purge is being given, a suitable diet of cows' milk should be prescribed or, when possible, breast milk should be given. Additions should be made to the diet of foods relatively rich in calcium—for example, cabbage, turnip, and oatmeal—given in the form of vegetable purée, with the addition of oatmeal gruel. If there is any doubt about the supply of calcium in the diet calcium chloride in doses of 10 to 15 gr. two or three times a day should be added. Intestinal indigestion should be treated on the traditional lines of cutting down the intake of fat and excess of carbohydrates and giving an increased amount of protein. Skimmed cows' milk or protein milk serves as a suitable basis of such a diet. Potatoes, bread, and rice, containing relatively little calcium, should be replaced by vegetable purée, oatmeal, junket, and meat. An initial dose of castor oil should be followed by a daily powder containing calomel, rhubarb, and ginger suitable for the age of the child. Cod-liver oil plays a part in the absorption or utilisation of calcium and should be given in all cases. A teaspoonful of a 50 per cent. emulsion twice a day suffices.

The chief hygienic measure is to have the child nursed as much as possible in the open air and sunlight. The modern fashion of withdrawing children from out-of-doors sunlight to indoor artificial light treatment is to be deplored; but at certain seasons, and in large industrial towns, a daily exposure to mercury-vapour lamp will serve as a useful supplementary method.

Most important, however, of the measures of general treatment is the systematic administration of acids, best given as hydrochloric acid or ammonium chloride. A child of 12 months should have up to half a drachm of acid hydrochlor. dil. (B.P.) diluted in 10 oz. of water in the 24 hours. The acid solution can be suitably given as a diluent to the milk, care being taken not to exceed the proportion of acid to milk which will produce clotting—roughly 1 pint of acid solution to 2 pints of milk. Ammonium chloride is just as efficacious. After absorption the ammonium is

converted to urea and HCl liberated. A suitable dose is a drachm, dissolved in 10 oz. of water, to be taken during each 24 hours, or added to the milk.

Symptomatic Treatment.

The chief urgent symptoms of spasmophilia are convulsions, laryngospasm, and carpopedal spasm; success in their relief will be but temporary unless general treatment has been instituted. When called to see a child who has had a convulsion, the first step is to decide that it was spasmophilic in origin. Chvostek's sign (a sudden spasm on tapping one side of the face) will usually decide the diagnosis, but meningitis, polio-encephalitis, pyelitis, pneumonia, and other diseases should be excluded. A hot bath with cold compresses to the head is a valuable therapeutic measure which will almost certainly have been resorted to by the nurse or mother. In the presence of an actual spasmophilic convulsion, preparations should be made for a rectal wash-out and the rectal administration of chloral hydrate while the hot bath is being given. Chloral hydrate is remarkably effective and safe in these cases. For a child of 12 months a dose of 10 to 15 gr. dissolved in water should be left in the rectum after a preliminary washing out. If the child is able to swallow, 3 gr. chloral hydrate should be given by the mouth instead. In refractory cases an inhalation of chloroform should be used. A practitioner called to such a case should take a rubber catheter, a solution of chloral hydrate, and chloroform.

Laryngospasm, or *laryngismus stridulus*, is an urgent spasmophilic symptom; though improbable, it is yet possible that the condition *may* be fatal, the spasmodic closure of the glottis going on to produce cyanosis, convulsions, and death. The child should not be moved until the urgent symptoms have been controlled, since exposure to chill and fright, such as might occur in a cab on the way to a hospital, exercise a deleterious effect. Hot sponges should be applied to the larynx, while chloral hydrate and rectal wash-outs are used. While awaiting the effect of treatment it is wise to confirm the diagnosis, excluding laryngeal diphtheria or impacted foreign body.

The symptoms of *carpopedal spasm* are not necessarily urgent, but usually require active special treatment, leading after a few hours to much pain and discomfort. The child is usually miserable and crying. Successions of hot baths with chloral hydrate or antipyrin should be tried, until the general measures of treatment have produced their effect.

Chronic and Refractory Cases. Parathyroid Treatment.

Almost every case of spasmophilia—i.e., of idiopathic infantile tetany, or "spring" tetany—yields readily to treatment on these lines. In the rare case of persistent or recurrent tetany which resists treatment there is commonly some chronic bowel condition, such as cœliac disease or idiopathic dilatation of the colon, which demands treatment. If, however, there is no chronic intestinal disease to account for it, a disease of the parathyroids may be suspected. I am in no position, however, to say how this can be proved, for in those cases of persistent and recurrent tetany in a child in which I have been forced to this diagnosis, various samples of parathyroid gland had no effect. The whole question of parathyroid therapy in tetany is centred in the problem of the preparation of an active extract. No doubt there will be great scope for its use when this problem is solved, and the recent experiments of Collip and Clarke[1] appear to mark a definite advance. Nevertheless, it is improbable that spasmophilia in infants is due to a parathyroid lesion. If it were so we would not expect it to be so readily curable as it is without the aid of parathyroid treatment.

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[1] Collip, J. B., and Clarke, E. P.: Journal of Biological Chemistry, 1925, lxiv., 485.

Special Articles.

AN INSTITUTE OF COMPARATIVE PATHOLOGY IN SOUTH AFRICA.

THE scientific quality of communications emanating from the laboratories of Veterinary Education and Research of the Union of South Africa, and of the reports issued from time to time by its director, is well known. The investigations carried out into the causal agencies of diseases affecting animals in the subcontinent, and the large measure of success achieved in eradication and control are of recognised importance to veterinarians and stock farmers throughout the world. With the generous support of successive governments before and since the Union, the Department of Agriculture has been enabled to expand its laboratories from an emergency shed, whence the rinderpest epizoötic of 1896 was studied, into a main institute at Onderstepoort, near Pretoria, with daughter institutes at Grahamstown and Pietermaritzburg, Vryburg, Bestersput, and Ermelo. An account of the detailed organisation of this unrivalled institute of comparative pathology, developed by Sir Arnold Theiler, K.C.M.G., would seem timely, in view of the efforts made within the last few years to foster the systematic study of this branch of science.

The Routine Department.

The buildings of the main institute alone cover some five acres, and the annual budget of the laboratories is over £90,000. Of this sum nearly half is recovered every year by the activities of the Routine Department, under the general direction of Dr. P. R. Viljoen, laboratory products being manufactured on a large scale for sale to farmers at practically cost price. The sale last year of 15,000,000 doses indicates sufficiently the farmers' confidence in the efficacy of the prophylactic and curative medicaments supplied. This confidence is fostered by addresses given by workers in the institutes, who are ready to discuss with farmers any difficulties or complications that may follow the use of laboratory products.

The total accommodation available at Onderstepoort for the various activities connected with the preparation of laboratory products consists of seven laboratories, seven kitchens, four store rooms, two incubating rooms, four packing rooms, and one cold storage room. The number of horses, mules, cattle, sheep, and goats kept in the stables and kraals on the laboratory site for various purposes averages 1500 at a time. These animals are mostly first utilised for the routine production and testing of vaccines and sera, and they then become available for experimental and research work. At the branch laboratories the numbers of animals on hand average 40 at Maritzburg, 550 at Vryburg, 1500 at Bestersput, 600 at Ermelo. Strict control of the movement of all animals is carried out so that intercurrent infectious diseases are immediately detected and steps promptly taken to check their spread. A staff of four officers devote their whole time to the recording of experimental data, commencing with the arrival of an animal at the station, its registered number, every experiment in which the animal is subjected for treatment, every result and clinical symptom, and, where necessary, full post-mortem report being entered on its own chart; thus it is possible, at a moment's notice, to obtain full particulars of every experiment that has been undertaken into any diseased condition. The records include notification of movements of animals from one stable to another, and cross reference given to any farmers' correspondence that may have led up to the initiation of an experiment.

Methods of Conferring Immunity.

Any attempt on a large scale to confer on animals immunity to specific diseases demands considerable ingenuity, even when ætiology is established. The

methods used vary from the comparatively simple preparation and distribution of vaccine where the causal organism of a disease is known, to the devising of means whereby immunity may be conferred against a disease, such as horse-sickness, thought to be due to a filterable virus transmitted by an insect.

Vaccines against Diseases of Known Causation.—Where an organism has been isolated the vaccines supplied are for the most part made up of live strains of attenuated virulence. For example, the live spore vaccine prepared from attenuated cultures of *anthrax* on the Pasteur principle, by a method recently worked out in the research department of the institute, gives almost absolute protection for a period of 12 months; indeed, so successful has this product proved that the Union Government last year decided on its free issue to farmers, in spite of the great loss of revenue entailed. The vaccine against quarter evil (caused by a sporulating bacterium) consists in the artificial aggressin produced by cultures; the immunity conferred is not absolute, but protection is afforded for 9 to 12 months. It should be noted, incidentally, that every batch of vaccine prepared at this institute is tested as to potency and value as an immunising agent before being passed for sale. This system of immunity control is one of the features of the organisation. Red water (*Piroplasma bigeminum*) in cattle is due to a protozoon in the blood, which remains there in some latent form after the animal has recovered. The strength of this residual virus fortunately varies in different cases, and the milder strains have been found suitable for use as vaccines without attenuation. On a similar principle is based the vaccine against anaplasmosis (gall-sickness), a disease caused by *Anaplasma marginale*. A strain was found (later called *Anaplasma centrale*) which produces a milder though still typical form of the disease, and immunity derived from *A. centrale* protects against the more severe diseases due to *A. marginale*. The two types of parasite are easily differentiated under the microscope.

Filterable and Ultra-microscopic Viruses.—In diseases of unknown ætiology, the virulence of infective material derived from a sick animal can sometimes be modified by passage through other animals of the same species. This principle is adopted in the preparation of blue tongue vaccine.

Horse-sickness.—Much more complicated is the system whereby horses, and to a lesser extent mules, are protected against the prevalent disease of horse-sickness. The horse that has recovered naturally from an attack of horse-sickness is called "salted" in South Africa; such animals are rare and are valued highly, since they show a considerable amount of immunity. The immunity is not, however, absolute, breakdowns occurring in seasons when the epidemic takes a severe form; but sufficient immunity can be conveyed to protect most animals against this disease.

Mules and horses differ in susceptibility to this disease and require different methods of conveying immunity. In mules a simultaneous inoculation of serum and virus brings about a fever reaction, and sometimes typical symptoms of horse-sickness. About 3000 mules are inoculated every year, 95 per cent. being subsequently immune; the mortality is 2–3 per cent. In horses two inoculations have to be made with a few days' interval between them, utilising similar serum on both occasions but different strains of virus. Several thousand horses have been inoculated, about 85 per cent. being protected. The scarcity of technical operators has prevented inoculation on a very large scale, but this difficulty is being overcome. Inoculated horses obtain an immunity at least equal to that obtained by "salted" horses, and are in great demand by farmers. In the preparation of serum precautions have to be taken against hæmolysis and against the transmission of infectious anæmia. This is a disease due to an ultra-visible virus easily communicated to horses either by blood or by serum, but experience has shown that if serum is kept for 12 months before use the infective agent is destroyed.

The preventive side of work carried out in the routine department is not confined to the production of vaccines and sera, but is concerned also with the giving of personal expert advice when required, and with distribution of pamphlets offering suggestions as to how by dipping, protection from insects, and by hygiene on farms infection may be further avoided. Knowledge gained from researches in this and other institutes is made available to farmers as soon as possible, and the rationale and limitations of any treatment advised carefully explained to them.

Curative Treatment.—On the curative side less success has been achieved, excepting in regard to the wireworm infection of sheep, for which over 11,000,000 doses of powder (sodium arsenite and copper sulphate) were sold last year. The use of a parasiticide for ticks has been attended with considerable success against the *Trichostrongylus* and *Œsophagostomum columbianum*.

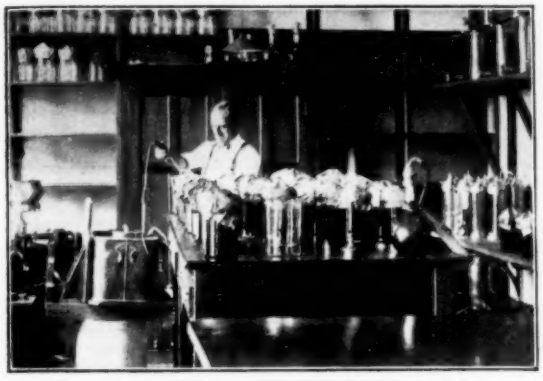
FIG. 1.

Front view of the main building at Onderstepoort, near Pretoria.

Sufficient dip-testing requisites for about 60,000 tests per year are issued for use with a cheap dip-testing instrument, which enables the farmer to control the strength of dips used for the eradication of ticks.

Diagnosis.—A special staff is available to investigate outbreaks of obscure diseases occurring on farms,

FIG. 2.



Decanting horse serum.

however remote. In any case of sudden collapse farmers are urged to send to the laboratories blood smears taken immediately after death, slides being supplied free. To ensure speedy communication a post and telegraph office has been installed actually in the building of the institute; between 50,000 and 60,000 letters, wires, and parcels are received every year and the same amount despatched from the central institute alone. The number of specimens examined approximate to 25,000 every year, and this applies only to microscopical, pathological, and serological specimens, leaving out of account chemical analyses. In addition about 1000 samples each year are received for chemical analysis, partly from farmers in relation to cases such as stock poisoning, partly from other sections of the division requiring chemical assistance, and partly in connexion with the Government Regulations controlling the sale of stock dips and stock remedies. Technical advisory work under these regulations is also carried out. Incidentally in South Africa a curious legal anomaly obtains. There are no antivivisection laws. Any unqualified person may practise veterinary surgery, and anæsthetics are not compulsory for any animal operations. On the other hand, no manufacturer is allowed to sell as a dip or as an internal remedy for any animal disease a mixture which is not accepted by the Government as corresponding to the claims made for it. Patent veterinary remedies are subject to rigid investigation in this institute. No such regulation is applied to patent medicines designed for human consumption.

Farmers are encouraged to forward for tests on experimental animals plants which they suspect of being poisonous. Those which are incriminated are subjected to detailed study in the botanical section of the biochemical department, where a museum of poisonous botanical specimens is arranged for inspection.

Research Activities.

Special blocks are allocated to the study of infectious diseases, pathology, biochemistry, bacteriology, entomology, and helminthology, under the direction respectively of Dr. P. J. du Toit, D.Ph., Zurich, Dr. Med. Vet., Berlin (deputy director of Veterinary Education and Research); Prof. Wall de Rock, Dr. Med. Vet., Berne; Prof. H. H. Greene, D.Sc. Glasgow; Dr. E. M. Robinson, Dr. Med. Vet., Berne; Mr. G. A. Bedford, F.E.S.; Dr. Frank Veglier, Dr. Med. Vet. Turin. Results are published from time to time in the scientific reports of the director,[1] in the *Journal of Agriculture* of the Union of South Africa, and in the appropriate special journals of Europe and America. The following notes do no more than call attention to a few of the problems now being attacked. On the pharmacological side of the biochemical department systematic research is only now commencing, but will mainly concern the investigation of plants directly poisonous to live stock, or responsible for stock disease (e.g., *Cotyledon wallichii*, *Geigeria passerinoides*). On the botanical side studies of the relationship between distribution of plants and occurrence of disease are undertaken. Problems in plant physiology related to nutritive value of natural veld have also formed the subject of laborious investigations by Dr. Marguerite Henrici, Ph.D. Basle, who has recently been appointed research officer in plant physiology. This work includes studies of the chlorophyll content of plants growing under arid conditions, the osmotic behaviour of wilting grasses, plant transpiration during drought, the carbohydrate metabolism of grasses under extreme meteorological conditions, the occurrence of hydrocyanic acid in edible grasses as a phenomenon of wilting, the mineral metabolism of grasses growing in phosphorus-deficient soils. On the more general biochemical side research work has ranged over chemical investigation of poisonous plants; the utility of various compounds for the eradication of external and internal parasites; the fate of ingested arsenicals in the animal body; the chemical changes brought about by bacteria in dipping tanks and the isolation on the non-pathogenic organisms concerned —e.g., *B. arsenoxydans* and *B. arsenreducens*; changes in eggs during cold storage; chemical aspects of deficiency diseases in stock; and a variety of other lines indicated by publications in the reports of the division. The most important work from an economic point of view at present in progress concerns the mineral metabolism of stock, particularly in relation to the "aphosphoriosis in cattle," so widespread over the Union of South Africa. Studies of soil and vegetation are combined with direct nutrition experiments upon the animal itself, both at laboratory headquarters and in the areas over which mineral deficiencies are reflected adversely by the animals, either in the form of specific disease (e.g., styfsiekte), or osteophagia, or generalised malnutrition (stunted growth). In some cases correction of the mineral deficiencies of natural veld has resulted in trebling the growth-rate of calves reared upon it. Results from laboratory experiments on mineral metabolism incidentally yield information upon vitamin factors in stock nutrition; the most interesting fact being that cattle are apparently not susceptible to avitaminoses, but can grow well on rations notably deficient in A, B, and C.

In the helminthological department two officers with their assistants devote all their time to the study of worm diseases. The life-histories of the commoner worms of sheep have been worked out accurately, and methods of combating the diseases are attempted on the basis of the knowledge so obtained. In the bacteriological department, where cultures of bacteria and of trypanosomes are maintained, particular attention is devoted to the study of anaerobes. In the entomological department a good collection of ticks, mosquitoes, flies, and other insects of economic importance is available and their life-histories are being studied.

The Investigation of Specific Diseases.

Nagana.—During the year 1922–23 an agreement was made with the Bayer Company in Germany to test their new remedy, "Bayer 205" on cases of nagana (sleeping sickness of cattle) in Zululand. The company undertook to supply sufficient quantities of the substance and to send their own veterinary surgeon to supervise the experiments. The institute, on the other hand, agreed to supply all the experimental animals and to place the entire staff and equipment of

[1] Ninth and tenth reports of the Director of Veterinary Education and Research, Government Printing and Stationery Office, Pretoria, 1924, pp. 823, 108.

the Nagana Research Laboratory near Empangeni in Zululand at the disposal of this work. The experiments were designed to determine both the prophylactic and the curative action of the drug on infections with *Trypanosoma congolense*, *Trypanosoma brucei*, and *Trypanosoma vivax*. The results obtained do not appear to have been altogether satisfactory,[1] especially in regard to the curative effect of "Bayer 205." However, from the prophylactic point of view fairly encouraging results were obtained. It was further found that by combining treatment by "Bayer 205" with tartar emetic animals could be protected against the bite of infected flies, even though exposed to a very severe infection. It is found troublesome in practice to carry out a series of injections into the jugular vein of cattle, and it is hoped to find a method of treatment which can be given subcutaneously.

Lamziekte.—Sir Arnold Theiler's own researches into diseases caused by piroplasms (*Theileria parva*, *Gonderia mutans*, *Anaplasma marginale*, &c.) and into the diseases of ultra-visible origin (horse-sickness, blue tongue, and heartwater) are classical. More recently the complete elucidation under his direction of the causation, prevention, and cure of the mysterious disease of cattle known as *Lamziekte*, as a typical instance of the fine work accomplished in this institute, may be considered in some detail. The chain of causation as unravelled by the director and his colleagues is shown clearly in the Fig. 3, which is largely self-explanatory. Low phosphorus content is a feature of South African soil; over wide areas of the Union the level of phosphorus reached in the natural vegetation is below the physiological optimum of cattle. Cattle attempt to supplement the deficiency by eating dead animal carcasses, often infected by specific saprophytic bacteria which produce a toxin causing the disease known as lamziekte. The deficiency not only leads indirectly to disease, through the pica induced in animals reared on such soil, but also limits their growth, damages their general condition, and diminishes their milk yield. Further experiments are in progress on the mineral metabolism of stock, and it is expected that considerable light will be thrown on other obscure nutritional disorders encountered in practice.

FIG. 3.

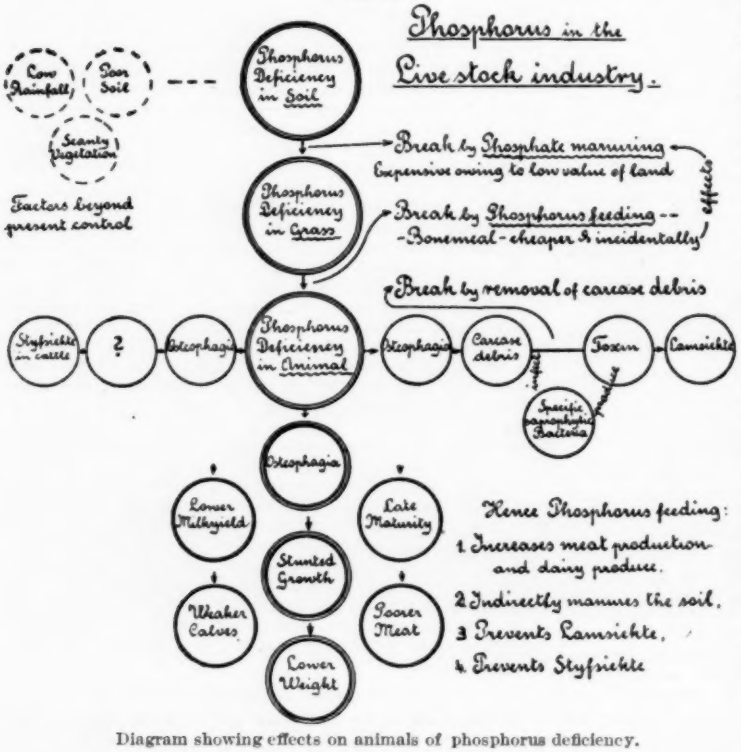
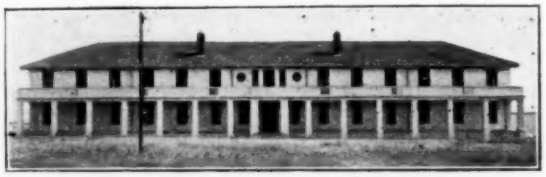


Diagram showing effects on animals of phosphorus deficiency.

Heartwater.—In 1923 the director of the Rockefeller Institute suggested that one of his staff should visit the institute for the purpose of comparing pathological conditions of animals found in other parts of the world with those prevalent in South Africa; accordingly Dr. E. V. Cowdry arrived at Onderstepoort in June, 1924, and left early in 1925, for the purpose of studying heartwater. The results of the investigations led to the discovery of rickettsia as the cause of heartwater, thus relating the South African disease to the Rocky Mountain fever of America. It is hoped that his visit will lead to an interchange of officers between South Africa and the United States, an arrangement which should react beneficially on the progress of comparative pathology in both countries.

FIG. 4.



The Students' Hostel.

Veterinary Education.

In 1920 educational duties were undertaken for the first time and blocks of buildings, including students' laboratories, lecture theatres, and a students' hostel (Fig. 4), were opened. The course extends over five years leading up to the degree of Bachelor of Veterinary Science (B.V.Sc.) in the University of South Africa. The Doctorate (D.V.Sc.) is attainable not less than two years after qualification by those engaged in research work, and not less than four years after qualification by practising veterinary surgeons on submission of a suitable original thesis. The first two years of preliminary scientific studies are taken at one of the colleges of the University of South Africa or at the Witwatersrand University, while the three vocational years are spent at Onderstepoort.

It is stated that, partly owing to the fact that B.V.Sc. graduates in Government service are now graded on a scale commensurate with the length, severity, and expense of the curriculum, the class of students attracted is very good; this enables a high teaching standard to be maintained. Inquiries are constantly being received from various sources concerning the facilities offered to foreign graduates who desire to specialise in subtropical veterinary science, and the question of running a special post-graduate course for overseas veterinarians is under

[1] Journal of the Department of Agriculture of the Union of South Africa, December, 1924, p. 530.

consideration. An advantage to students is that all the professors and lecturers are primarily research officers with ordinary official duties cognate to the subjects they profess. Preparation for tutorial duties is made outside official hours; teaching officers are graded £100 per annum higher than ordinary officers if of lecturer rank, and £200 higher if of professorial rank. In this way the five professors and eight lecturers are provided at the cost of only two full professorships at any of the Colleges of the University; at the same time teaching is conducted by specialists who, in turn, benefit by the need of keeping themselves up to date over the whole range of their particular subject.

The system is obviously economical and appears to be working well; indeed, it is held that the advantages of grafting the Veterinary Faculty of the University of South Africa on to the pre-existing division of veterinary research are becoming more apparent every year. Most of the required post-mortem material, embryological material, clinical cases, and the like, are obtained as by-products of the research and routine activities of the division; medical and surgical wards for domestic pets and operating theatres are provided for the benefit of students. Inasmuch as the staff, equipment, and material are already necessary for official work irrespective of the veterinary faculty, the resources for the training of students and post-graduates are exceptional in a new school. This institute should secure recognition as one of the primary centres in the British Empire for the teaching of tropical and subtropical veterinary science, and for post-graduate research work in comparative pathology.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

(*Continued from p. 1124.*)

Official Evidence (Q. 23830-24024).

Mr. Brock and Dr. Smith Whitaker continued their evidence and were asked whether they would favour the provision of the services of doctor and midwife as a first charge on the money available for maternity benefit. Mr. Brock said:—

The present cash benefit is popular, and any change which made the provision of midwives or doctors a first charge on the money available would not be readily accepted by the insured population, unless it left at least a substantial balance in cash in addition to the services in kind.

In general, with regard to this benefit and the question of linking-up the various arrangements for maternity services, the witness said that there was a great deal of overlapping and probably a good deal of waste, and it would be most desirable, if it could be arranged, to have a scheme that brought the family doctor, the midwife, the specialist, if necessary, and all the services that are available at the maternity centre under a common scheme and a common control, so that they each played their proper part and were brought into proper relation with one another, helping one another instead of acting at a distance as they do now. The difficulty was how the finance could be arranged.

Dental Services.

Mr. Brock agreed that dental treatment as a statutory benefit was most desirable if the money could be found. Something like three-quarters of the industrial population were suffering from dental defects, and the experience of societies giving dental treatment as an additional benefit gave ground for hoping that systematic dental treatment would lead ultimately to a reduction of sickness benefit claims. As from the beginning of this year schemes were in operation under which societies allowed free choice of dentist.

With regard to the scale of fees which would be in force for a national scheme, Mr. Brock said:—

Unless the scale is sufficiently generous to attract the men of better standing, you will not get the level of work which is really desirable. It would be unfortunate if insurance dentistry came to be looked upon as the cheapest and nastiest form of dentistry.

The cost of a complete service could not be very closely estimated because it depends not only on the extent of the need, but on the extent of the demand. It was thought, however, that 6s. per insured person per annum would be the lowest figure at which it would be safe to estimate the cost of a comprehensive dental benefit which did not provide for any contribution on the part of the insured person.

On the question of contributions towards the cost by the patients, the witness said:—

Any contribution by the insured person is always open to the objection that it will have the effect of ruling out the most necessitous class. Probably the great majority of insured people could afford to find £2 towards the cost of dentures, and the experience of the dental hospitals where they generally require a contribution to the denture cost is that in nearly all cases the money is ultimately forthcoming.

Cases of hardship might be met by the application of the surplus funds of societies to this purpose as an additional benefit.

With regard to dental clinics, the witness said that the economic advantages could only be secured in urban areas: if any system of consultant centres were established, it might be possible to combine dental centres with them. On other aspects of a dental service Mr. Brock said that the service would not lend itself to payment on a capitation basis, and that negotiations in regard to such a service could best be carried on with a joint committee (if one were set up) of the British Dental Association and the Public Dental Services Association.

Optical Treatment.

On the question of the conflicting evidence on the subject of sight testing from representatives of the medical profession and opticians respectively, Dr. Smith Whitaker said that the Ministry had themselves found on an independent examination of the question that the evidence was very conflicting. There were difficult cases of errors of refraction without any other disease of the eye, or disease of the body generally, which required the use of methods of examination which should only be carried out by people who have had a complete medical training.

On the other hand, there is a general impression, certainly among laymen, shared, I think, by some members of the medical profession, that quite a considerable proportion of cases of visual defects, particularly in elderly people, can be, and in fact are, being treated without any obvious injury to the patient by people who have had no medical training, and in some cases even by people who have not had the special training in the measurement of refractive errors that some sight-testing opticians have received.

The difficulty was to measure the amount of risk that really arises through such cases being treated by people who have not had a medical training.

The Board of Education have had to consider this question in connexion with the inspection and treatment of school children, and they have adopted from the beginning the policy of employing, for the diagnosis and treatment of errors of refraction, medical practitioners only who have had a special training in sight testing. If the responsibility were assumed by the State or by any public authority of providing a public system, the question would be whether they could safely adopt any other policy than that which the Board of Education has adopted.

The question of qualification in eye work for men who have any kind of surgical aptitude at all is mainly a question of their being able to get the requisite amount of experience.

* References to the paragraphs in the printed statements issued as appendices to the reports of the oral evidence are given thus: "App. X. 69," and references to the oral evidence thus—Q. 1369.

Most doctors . . . are potentially qualified, and if the work were there to be done, they would soon become really qualified. You do not need for the testing of errors of refraction the special skill of an ophthalmic surgeon who undertakes all kinds of delicate operations on the eye.

Asked whether ophthalmic benefit, including the provision of glasses, could only be included amongst the normal benefits available to all insured persons as part of a large scheme for the extension of medical benefit to include a specialist service, the witness said that that would doubtless be so if the benefit were to provide for the treatment by specialists of all diseases and injuries of the eye, but it was thought that—

An ophthalmic benefit that was restricted to the treatment of errors of refraction, including the provision of glasses, might be brought within the scope of medical benefit independently of any general inclusion of specialist services, and it would be worth providing if the money were available, even although other specialist services were not at the same time made available.

The cost on the basis of 6*d.* an insured person would be under £400,000 a year.

Nursing Service.—Massage.

With regard to a domiciliary nursing service, the witnesses expressed doubt whether a service could be provided of sufficient value to justify the application of funds which might be applied in other directions where at present there was no organised service. In the case of nursing, the district nursing associations already covered the ground to a very considerable extent. The societies had shown little disposition to apply their surpluses in the recent valuation towards schemes for nursing services.

Dr. Smith Whitaker said there could be no doubt as to the value of massage and electrical treatment, particularly for cases of after-effects of injuries and rheumatic conditions by which a large amount of prolonged incapacity for work is produced. If funds would permit of such a service it would be more economically and efficiently provided as a part of statutory medical benefit rather than as a separate service given by the Approved Societies.

Insurance Committees.

With regard to the criticism of the Insurance Committee system, Mr. Brock said that this seemed to be well founded. The representatives of Approved Societies on the Committees, to a large extent, are lacking in experience of public administration, and the effective work of committees had become so limited in range as to offer little inducement to public-spirited people to serve.

If you give them more work to do, say an extension of their general health duties, you bring them into competition with the other local health authorities, and you also tempt them to undertake work in which they really need the guidance of the sort of expert medical staff that the local authority has and which the Insurance Committee has not.

Mr. Brock made it quite clear that the work of the Insurance Committee staffs was in a different category.

The Insurance Committees' staffs have done their work exceedingly well, and I want to make it quite clear that, while I cannot dissent from the general criticism of Insurance Committees, I do want to pay my tribute to the efficiency of the work of their staffs.

With regard to the future of the Insurance Medical Service, Mr. Brock said :—

We think a transfer of the powers and duties of Insurance Committees to the appropriate committees of the county and county borough councils would have the great advantage of being a step towards the coördination of all local health functions which is generally recognised as the logical corollary of the coördination of central health functions in the Ministry of Health. It would certainly facilitate coördination between insurance and other public health services, and it would secure the independent expert advice of the medical officer of health and other medical officers of the councils. We should agree that if the functions of Insurance Committees are to be transferred to the councils, then, whatever committee is charged with these duties, it is desirable that it should contain a strong co-opted element, including adequate representation of the doctors.

Other Points relating to Medical Benefit.

The present capitation fee is 9s., and it was not thought that any further inquiry would be likely to lead to a different result. The cost of drugs for the insured population was rising, and the biggest factor in the rise was increased frequency in prescribing in which undoubtedly there was some element of waste.

As to the distribution amongst doctors of that part of the medical pool which related to insured persons who have not selected a doctor, it was pointed out that the great bulk of these were new entrants who very often postpone their choice until they find themselves in actual need of treatment.

As to limitation of numbers on doctors' lists, Mr. Brock said :—

Our experience does not suggest that there would be any danger in reverting to the previous limit of 3000 for a practitioner working single-handed, but we see no reason for revising the present figure, which was arrived at by agreement between both parties. . . . We do attach importance to a strict limitation of the number of assistants to be employed in order to prevent the farming out of insurance practice.

The unrestricted right of any qualified medical practitioner to be admitted to the panel ought, in the opinion of the Ministry, to continue. Objection to a doctor's inclusion on the ground of his bad record might bring the Committee into conflict with the General Medical Council.

It is perfectly true that doctors are from time to time removed from the medical list for offences which the General Medical Council may not regard as justifying removal from the register, but these are definite acts in relation to insured persons which have to be established before a competent committee of inquiry. This is quite a different thing from objecting to a doctor on the general ground of his conduct at some time in the past when he was not subject to any disciplinary control apart from that of the General Medical Council.

The suggestion which had been put forward that a doctor's admission to the list should be conditional on the provision of satisfactory surgery accommodation was not well advised, because the standard of adequacy must depend upon the number of patients for whom the doctor accepts responsibility. Until he has come on the list he can have no insured patients, and the adequacy of his surgery accommodation cannot in fairness be considered except in relation to his actual obligations.

THE MEDICAL INSURANCE AGENCY.

A MEETING of the Committee of Management of the Medical Insurance Agency was held at the House of the British Medical Association, Tavistock-square, W.C., on Dec. 2nd, Sir Humphry Rolleston, the Chairman, presiding. A report of the work of the Agency during the year ending Dec. 31st, 1924, to which a financial statement was appended, was read by the Chairman, and showed that during the year under review the Agency maintained its regular progress; the high standard of former years in new life business transactions was repeated, while in motor-car insurance there was a steady increase, principally due to the special policy which the Agency has been able to secure on behalf of medical men. There was a substantial increase in rebates in all branches except that of Employers Liability, the figures showing a direct benefit to medical men and women insuring through the Agency. After the payment of income-tax, a claim for which was settled under protest, there remained for the year 1924 considerable increase in surplus to be carried to the Medical Benefit Account.

An interim report was received from the Secretary covering the first nine months of the current year, and during this period the rate of progress was more than maintained. The Agency introduced during the first nine months of 1925 no less than £134,400 in insurance, spreading the insurances over first-class companies.

Other business of the Committee consisted in the election to its body of Dr. R. A. Bolam and Mr. Bishop Harman, and the appointment of two useful subcommittees. The first of these, the members being Dr. H. A. Des Voeux, Dr. R. A. Gibbons, and Mr. Bishop Harman, was authorised to consider the future of the Agency and to draw up a scheme, if found advisable, for its incorporation into a Limited Liability Company; the members were empowered to take the necessary legal advice. The second subcommittee, composed of Sir Humphry Rolleston, Dr. R. A. Gibbons, and Mrs. Arthur Ormond, was appointed to consider and report upon the best use of the Girls Education Fund, and it was decided that for the ensuing year one member of this subcommittee should be elected from among the members of the Committee of the Royal Medical Benevolent Fund Guild.

The result of two full years' working of the Scheme for Technical Advice on the purchase of motor-cars, existing between Messrs. Mann Egerton and Co. and the Agency, can now be seen, and in the report the thanks of the Agency were expressed to their consulting engineers for the able manner in which so many difficult questions had been handled.

Grants to Medical Charities.

The Committee resolved that out of the balance standing to the credit of the Medical Benevolent Account, the following grants should be made:—

	£	s.
Royal Medical Benevolent Fund	525	0
Royal Medical Benevolent Fund Guild ..	525	0
Epsom College Benevolent Fund .. .. (This grant was divided by the Committee in such a way as to leave a grant in the name of Sir Dawson Williams of £105, and a similar grant in the name of Sir Squire Sprigge)	525	0
Educational Grants (Girls Subcommittee) ..	210	0
B.M.A. Charities Fund	157	10
Royal Medical Benevolent Fund Christmas Appeal..	52	10
Royal Home for Incurables, Putney	52	10
Birmingham Medical Benevolent Society ..	26	5
THE LANCET, Editor's Discretionary Fund ..	26	5
Total..	2100	0

As a result of this distribution the total sum subscribed to medical charities by this Agency since 1910 has exceeded £14,000.

Special Grant to Agent.

A grant of £105 was made to Mr. P. N. Adamthwaite to mark the Committee's pleasure at the success of the Scheme for Technical Advice.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Dublin Hospitals and Workmen's Compensation.

THE Dublin hospitals have been forced by circumstances in the past few years to look carefully into the possibility of recovering the expenses of patients' treatment if anyone can be made responsible for such expenses. A special problem is presented by the case of workmen to whom accidents occur in the course of their employment. These patients receive free treatment, often extending over weeks or months, and, eventually, many of them recover damages from their employers. The award is supposed to cover expenses of treatment, but the hospital bill is rarely paid. Dr. Horace Law, on behalf of the Board of Associated Clinical Hospitals of Dublin, put this case before the Committee on Workmen's Compensation last week. He pointed out that the main provision of medical and surgical treatment for cases coming under the Workmen's Compensation Acts had for many years been made by the voluntary hospitals, and that there was no provision for hospital expenses in the case of accident or illness in the course of employment unless (1) the worker had arranged for it by previous payment in trade-unions or guilds; (2) paid himself for his maintenance in the hospital; or (3) the employer had subscribed to the hospital. There was no power to compel the employer or the insurance companies who had insured the employer to pay direct to the hospital or to contribute to the payment for the maintenance of the patient in hospital.

Regius Professor of Physic in Dublin University.

Dr. T. G. Moorhead, King's professor of materia medica in the School of Physic, has been elected Regius Professor of Physic in the University of Dublin, in place of Dr. J. M. Purser, resigned. Dr. Moorhead had a brilliant course in the school, winning exhibitions and scholarships and the Medical Travelling Prize. Having taken his degrees in 1901, he spent a year as chief demonstrator of anatomy in the school, and in 1902 was appointed assistant physician to Sir P. Dun's Hospital. In 1903 he became physician to the Royal City of Dublin Hospital, and in 1921 he was elected King's professor of materia medica. He has long been recognised as one of the leading teachers and clinicians in the Dublin school. He is still a young man and may be expected to bring energy and vision to the duties of his new post.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Formal Opening of the University of Paris.

ALL faculties of the University of Paris assisted at the formal annual opening of the University on Nov. 28th. It is the custom at such openings to announce the University's awards of honorary degrees. At the opening for this year those receiving the doctorate, *honoris causâ*, were Sir Ernest Rutherford, Mr. de la Vallée-Poussin, Prof. Edwin R. Seligman, Sir Paul Vinogradof, Signor Ettore Pais, Sir Edmund Gosse, Dr. Noguchi, and Prof. Pavlov. The work of Rutherford in radioactivity, that of Noguchi, of the Rockefeller Institute, New York, in yellow fever, vaccinotherapy, and serotherapy, and that of Pavlov in gastric physiology are well known in the field of medicine. The other names represent mathematics, economics, jurisprudence, archæology, and literature. As usual, the university ceremonies presented a mediæval setting of gorgeous gowns, hoods, and caps, and armoured men-at-arms.

The Entry into the Medical Profession.

During the academic year 1924–25 there was a slight diminution from the preceding year in the number of diplomas of doctor of medicine granted by the Medical Faculties of France—namely, 1047, as compared with 1123. The distribution over the various medical schools was as follows: Paris 481, Lyons 139, Bordeaux 123, Montpellier 103, Toulouse 53, Strasbourg 41, Lille 33, Algiers 31, Beirut 22, and Nancy 21. These numbers represent only the State diplomas, and do not include 93 university diplomas granted to foreigners, which do not entitle the holder to practise in France.

Poisoning by Carbon Monoxide.

As winter has brought with it the necessity for the use of coke stoves, several cases of poisoning by carbon monoxide have occurred. In one case-group three persons died from such poisoning, induced by defective ventilation in a chimney. In a second example, a man and wife were found dead in bed, the poisoning having apparently been produced by a worn-out stove, the carbon monoxide pouring into the room through cracks and holes in the casing. The two deaths of the second case-group constituted the subject of a striking demonstration made by Prof. Balthazard, who conducted the autopsies at the Institute of Legal Medicine, which replaces the former Morgue of literary and historic fame.

Annual Meeting of the Grancher Clinic.

The annual meeting of the Grancher antituberculosis clinic was held on Nov. 28th. This clinic has become known internationally in the field of

tuberculosis. Madame Pasteur was formerly the president of this endeavour. Her daughter, Madame Valléry-Radot, is now president, thus continuing the noble traditions of the Pasteurs. At the meeting Dr. Calmette delivered an eloquent address, in which he emphasised the economic value of preventing, rather than treating, tuberculosis.

The sale of stamps for raising money to aid the antituberculosis campaign has been launched for the first time in France. It will be tried out by the National Committee of Defence against Tuberculosis in the Département of Meurthe-et-Moselle.

Insulin and Pregnancy.

Pregnancy is not welcome to diabetic women. Obstetricians have often counselled abortion in such cases, as the evolution of the ovum may be abnormal, hydramnios is frequent, and the size of the products of conception often excessive. As a rule, the fœtus succumbs either in the course of gestation, during labour, or shortly after birth. The effect of pregnancy on the diabetic subject herself is often bad; the disease tends to become aggravated after the sixth month, and death in the puerperium or soon after is not rare. Prof. Marcel Labbé and Prof. Couvelaire have reported to the Academy of Medicine a case which demonstrates how completely the exhibition of insulin has changed the outlook. With insulin a diabetic woman, who would otherwise have aborted or died of acidosis, may go on to term and give birth to a healthy child. Women with diabetes should avoid conception if they can, but should pregnancy occur a strict dietary and the skilful administration of insulin may bring about a happy issue.

Death of Prof. Wallich.

Prof. Victor Wallich, of the Faculté and Académie de Médecine, died on Nov. 29th at the age of 62. Dr. Wallich made many valuable contributions in pathology, obstetrics, physiology, and serotherapy, and was especially active in the field of puericulture, where he served as a pupil of Pinard. In his teaching he utilised cinematographic films. His death leaves a vacancy which will not be easily filled.

Male Responsibility in Infanticide.

In consequence of a recent trial at Paris, in which a young woman, seduced and deserted, had killed her new-born infant, and the legal penalties were abrogated, a movement was initiated for legislation designed to extend to the male responsibility in such cases. The new movement has taken the form of a resolution which, it is hoped, will pave the way for formal legal action.

Increasing Pensions in War Disability.

As now exercised, the French veteran pension laws do not fully provide appraisement of 100 per cent. disability for certain cases in which, nevertheless, the disability is total. The cases referred to are those of tremor and other neuropathies. A movement is now progressing to permit such cases to be assessed at the full disability of 100 per cent., and thus to receive adequate monetary allowance. The new movement does not extend to cases where re-education is possible.

"12 bis."

In the official list of notifiable infectious diseases puerperal fever and ophthalmia neonatorum are at present included under the same number—"12." This grouping has been found to stand in the way of trustworthy statistics being compiled, and hence of proper prophylactic measures. For this reason, on the representation of the Medico-Chirurgical Society of Bordeaux, the Academy of Medicine has decided to urge the Minister of Hygiene to make ophthalmia neonatorum notifiable under the number "12 bis."

Dr. Jacques Forestier, of Aix-les-Bains, well known for his work in radiology in collaboration with Prof. Sicard, has been invited by the American Radiological Association to visit the United States, where he will deliver a series of lectures on recent advances in radiology.

In a thesis on drug addiction, presented to the Academy of Medicine, Dr. Tardieu mentions a case of suicide due to veronal ingested in *coquetels*, the term applied to a beverage in common use in the neighbourhood of Bordeaux. French papers are claiming priority in the "cocktail" for the Bordelais.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following table gives some of the 1924 statistics for a group, composed of one city, one borough, and seven county boroughs. The low birth-rates and high neonatal mortalities in the "mill" towns attract attention, especially when compared with towns in mining areas like Sunderland and Wigan, where the total infant mortality-rate is not low.

Name of town.	Estimated mid-year population (R.G.).	Birth-rate.	Death-rates per 1000 of the population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Neonatal mortality.	Infant mortality.	Maternal mort. from childbirth.
Cardiff C.	226,400	21·6	12·1	1·52	1·13	2·6	28	78	5·3
Sunderland C.B.	165,100	25·9	15·0	1·42	1·06	4·2	34	101	4·4
Bolton C.B. ..	181,100	17·6	14·0	1·12	1·34	3·3	36	92	7·8
Oldham C.B. ..	147,300	16·3	13·7	1·20	1·41	3·3	51	111	2·9
Bury C.B... ..	56,830	15·5	14·7	0·93	1·72	3·4	38	71	4·5
Wigan C.B. ..	91,180	21·9	14·3	0·92	0·76	3·9	31	107	6·0
Derby C.B. ..	133,700	19·2	11·3	1·03	1·29	2·0	25	62	1·9
West Bromwich C.B.	78,730	23·6	12·2	0·86	0·99	3·6	40	89	2·2
Nuneaton B. ..	44,620	21·6	9·7	1·03	0·98	1·6	36	59	7·2

C. = City. B. = Borough. C.B. = County Borough.

Cardiff.

Dr. Ralph M. F. Picken reports that the increased prevalence of encephalitis lethargica has not yet affected Cardiff. Only ten cases came to the knowledge of the health department, and cases appear to have been equally scarce in Swansea, Newport, and Merthyr.

Last year a chart was included in the report showing the upward tendency of the mortality from pulmonary tuberculosis in Cardiff, a tendency which Dr. Picken has not traced in any other large city. Although the mortality was a little lower in 1924, the rate is high compared with other large towns. Thus among the 17 largest towns of England and Wales during 1924 Liverpool heads the list with a rate of 1300 per million from pulmonary tuberculosis, and Cardiff comes second with a rate of 1276, Sheffield being lowest with a rate of 821. For all forms of tuberculosis Cardiff was worse than Liverpool and was highest of all those towns with populations exceeding 200,000. Up to now Dr. Picken has been unable to account for this by any cause relating to the nationality or origin of the population, or their age-distribution or any climatic or environmental factor operating in the city. The occupational table, however, of newly notified cases of tuberculosis, which is given for the first time in the report, shows a very high proportion of seafaring men. Thus out of 221 males

notified for pulmonary tuberculosis 47 were seamen. The only other occupations which reached double figures were clerks, typists, &c., 19, and labourers, 30. Of the 63 notified male cases of non-pulmonary tuberculosis the occupation of seamen furnished 9, while there were 13 children of school age and 14 children under school age. The figures somewhat confirm the remarks of Dr. Howard Jones in his report to the Newport Port Sanitary Authority. Dr. Picken reports a decline in the number of new cases at the V.D. clinics at the Royal Infirmary and the Seamen's Hospital. The figures have shown for some time that these centres do not attract the innocently acquired cases among women and children. To meet this difficulty special clinics are to be held at least twice a week in connexion with the maternity and child welfare scheme.

The Cancer Local Advisory Committee met towards the end of 1924 and drew up a plan of campaign. With the coöperation of the management of the infirmary it is hoped shortly to complete a statement showing the remote results of operations for cancer of the breast over a number of years. Voluntary notification has been adopted and a leaflet on cancer of the breast has been issued, pointing out to women the importance of consulting a doctor at once if any swelling or lump in the breast is noticed. The antenatal clinic, conducted jointly by the local authority and the Royal Infirmary, was opened on Dec. 18th, 1924, and at the time of writing bids fair to justify the hopes entertained as to its value. A room at the new clinic at 50, Park-place has been set apart and equipped for dealing with crippled children of all ages. A specially qualified nurse has been appointed to follow up such cases, to keep them in touch with the Prince of Wales's Hospital, and to administer massage, electricity, and postural treatment. Of the 286 cripples known to the department on August 31st, 1925, 93 were under the age of 5, 66 of whom were crippled by poliomyelitis and 12 by rickets. Of 188 cripples, aged from 5 to 16 years, 75 were the victims of poliomyelitis, 25 of tuberculosis, and 13 of rickets. The fact that there are only 5 known cases of rippling over the age of 16 shows that the registration for later ages is quite incomplete.

Dr. Picken thinks that the maternity and child welfare organisation would be improved if it were found administratively convenient to amalgamate the school medical nursing staff and the health visitors on lines similar to the amalgamation of the medical staff.

Sunderland.

Dr. Henry Renney reports that of 106 samples of milk examined for tubercle, 11 gave a positive result. In all cases the milks came from farms outside the borough, and in the majority of cases the veterinary surgeon on visiting found cows suffering from tuberculosis of the udder. The usual procedure adopted was to obtain an undertaking in writing from the farmer that he would not send milk from the infected cow into the borough. The antenatal centre at the maternity home has been given up, but the centrally situated antenatal centre has become "exceedingly popular" and an extension of its hours is necessary to meet the demand. Of the 115 cases of ophthalmia neonatorum notified, 94 were treated at the Eye Infirmary. Midwives attended 73·6 per cent. of the total births. There being no further need of a municipal midwife at the East End of the town, the office was terminated in December. There was only one case of puerperal fever notified during the year and no case occurred in the practice of a midwife. About 50 voluntary workers attend every week at the 11 infant welfare centres.

For the first time in 50 years there were no deaths from scarlet fever in the borough. The notifications of encephalitis lethargica, which numbered 4 in 1923, were 37 in 1924. There were only 2 deaths and no mention is made of steps taken to verify the diagnosis.

Bolton.

Dr. C. W. Paget Moffatt reports that the opening of the Moss-street baths and washhouses in October has conferred a great boon on the inhabitants. The building contains swimming baths for men and women, 18 slipper baths, and 24 washhouse stalls. The washhouses have so obviously supplied a very urgent want that it is hoped the same provision may be made before long in other quarters of the town. Dr. Moffatt presses the need for reasonably accessible playing fields for the younger members of the community. For non-pulmonary tuberculosis in children Bolton has a call on six beds at the Liverpool Children's Hospital, Heswall. This is not enough, and proposals are under consideration for a complete scheme for the treatment and care of cripples, including surgical tuberculosis.

Dr. Moffatt refers to the stationary position of the maternal and neonatal death-rates during the last 20 years. Thus for 1905–14 the neonatal rate was 41·7, and for 1915–24 it was 40·3. As regards prenatal work, Dr. Moffatt says it is essential that this work should now be extended by the establishment of a prenatal clinic in charge of a competent obstetrician. The Haslam Maternity Home admitted 220 cases during 1924. There were no maternal deaths during the year. In eight cases the baby was not entirely breast-fed while in the institution, in six cases because the milk was insufficient, in one case because the milk was not suitable, and in one case because the infant was premature. Six cases of insufficiency out of 220 cases is a high percentage. Notifications of encephalitis lethargica showed an increase. There were 40 cases with 17 deaths. All the notifying doctors were asked to supply particulars as to the present (i.e., May, 1925) condition. Of 26 survivors, 13 were reported to have recovered completely, six to be improving, and the remainder to be suffering from various forms of paralysis and mental and nervous symptoms. One case notified on April 5th committed suicide on Nov. 12th. In five cases certified to have died from this disease there had been no notification. The analyst's report shows that the percentage of cereal in shredded suet samples varied from 11 to 21. Ten per cent. of cereal is considered adequate to make a marketable product and any excess over this limit is added solely for extra profit.

Oldham.

Dr. James B. Wilkinson reports as the principal item in the year's work the Ministry's inquiry *re* the clearance of the Smethurst-street unsanitary area, which has been under consideration for over 14 years. The area covers 4·9 acres, contains 259 houses, and has a population of 1425 persons. The Coldhurst ward, in which the area is situated, had an infant mortality of 205 during 1924. There has been very little addition made to the house accommodation for the working classes during the year. The results from the treatment of a few marasmic and rickety babies at Westhulme Hospital have been so satisfactory that a small baby's hospital has been sanctioned by the Ministry of Health. Dr. Wilkinson draws attention to the fact that the only two wards which have a birth-rate of over 20 have low infantile mortality-rates. The damage done by ophthalmia neonatorum was one blinded baby, one with vision severely impaired, and one with vision slightly impaired. 13*s.* to 15*s.* per week for a single room containing a minimum amount of bedding and dilapidated furniture is a very usual charge, and shows that owing to the scarcity of houses "furnished rooms" can obtain just as high a rental as ever.

Bury.

Dr. G. Granville Buckley reports that the infant mortality-rate of 71 is by far the lowest ever recorded in the borough and compares with 101 for the year 1923. The Bury sanitary authority arrange with the Bury Infirmary for the treatment of complicated cases of labour and of non-pulmonary

tuberculosis, and with the Manchester and Salford Hospital for Skin Diseases for patients suffering from tuberculosis of the skin. During 1924 eight cases of complicated labour and ten skin cases were treated under these arrangements. The tuberculosis dispensary, which was presented to the town by the Earl of Derby, is used jointly by the borough and the county council.

Wigan.

Dr. Henry Whitehead reports that there was a severe epidemic of measles during the latter part of the year. There were 78 deaths from this disease, making the unusually high death-rate of 0·85. In October two nurses from the Infectious Diseases Hospital were detailed to visit the cases and nurse the worst ones, and a third nurse began work in November. An up-to-date milk pasteurising plant has been established in the town, and in June the health committee decided to purchase pasteurised milk in bottles for the maternity and child welfare scheme and pasteurised milk in sealed kits for the supply of the borough hospitals. Dr. Whitehead records a small milk-borne outbreak of paratyphoid B. Eight cases were notified within ten days and were found to be supplied by two milkmen, who obtained their milk from the same farm outside the borough. A visit to the farm showed that the farmer had suffered from typhoid fever five years previously, and that his three daughters were out of health, one being convalescent and the other two ill with "influenza." Blood tests showed that all four were strongly positive to paratyphoid B. It seemed probable that the farmer was a carrier and had been the means of infecting his three daughters and the eight patients within the borough. Dr. Whitehead points out that pasteurisation would have prevented this outbreak. The scheme for the conversion of all privies and pail-closets to water-closets is going on very satisfactorily. Additional water-closets are also provided, when necessary, to enable each house to have its own convenience. Although more houses were built in 1924 than in 1923—namely, 74 compared with 23—the housing shortage is becoming more and more acute, and in consequence no definite progress can be made in dealing effectually with unsanitary areas or unsanitary dwellings.

Derby.

Dr. Albert E. Brindley reports an increase of encephalitis lethargica, there being 18 notifications and nine deaths. Small-pox became epidemic in April and continued throughout the year, 210 cases being notified with no deaths. The shortage of houses still prevents the demolition of unsanitary dwellings. From August, 1919, to the end of June, 1925, 940 new houses were built under the corporation scheme. At June 30th, 1925, 174 houses were in course of erection and 675 are to be begun in the near future. The natural increase of the population during the three years 1922–24 would absorb 750 houses. The mayor has put forward an urgent plea for the more rapid provision of houses, even if the construction is more or less of a temporary nature, and Dr. Brindley supports this view. Other needs of Derby are the increase of accommodation for patients and nurses at the isolation hospital, the extension of the dental service for expectant and nursing mothers, facilities for the dental treatment of tuberculous patients, and of patients in the isolation hospital, and the provision of an X ray installation.

West Bromwich.

Dr. R. Woolsey Stocks notes an increase in the attendances at infant welfare centres, but stresses the importance of extension of the work amongst toddlers and expectant mothers. He points out that the four maternal deaths from childbirth might have been prevented by antenatal attention, and that one can only hope to deal effectively with the high neonatal mortality by systematic antenatal examination. The number of mothers attending the antenatal clinic has increased to 150 from 51 in the previous years, and the number of mothers who submitted themselves for examination by the doctor was 94, as compared with 16 in the previous year. As the births numbered 1862 it will be seen that the antenatal work is on a very small scale. There is an improvement as regards the coöperation of the midwives, but there are still a number of midwives who never advise their prospective patients to come to the antenatal clinic, and "it is through the midwives that the greatest advance can be looked for in this work."

Nuneaton.

Dr. K. E. Tapper presents his third and last report before taking up his new duties at Bromley. He expresses his satisfaction that the infant mortality-rate has reached a figure below 60 for the first time, and in his report he indicates how further reduction may be obtained. Thus nearly half the infant deaths occurred in the first week, and 105 of the babies had been partially taken off the breast before the first visit of the health visitor. The total births numbered 971; antenatal sessions had only just been started at the end of the current year. The housing and living conditions of a portion of the population "are nothing less than deplorable." They are not wholly remediable by adequate housing conditions, as the "deplorable tenants" must be shown the error of their ways. A routine veterinary inspection of the milk cows in the borough has been begun. Thirty-five cases of small-pox were notified with no deaths. The deaths from encephalitis lethargica numbered five, the notifications 13. Dr. Tapper puts in a plea for a maternity home with accommodation for ailing babies. He sums up the housing needs of the borough as 500 new houses for 1925 and 300 for each of the next nine years. Thirty-four houses were erected under the municipal scheme for 1924.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 28TH, 1925.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 105 (as under); scarlet fever, 2195; diphtheria, 1091; enteric fever, 54; pneumonia, 1531 (as compared with 1186 and 889 in previous weeks); puerperal fever, 52; cerebro-spinal fever, 7; acute poliomyelitis, 7; acute polio-encephalitis, 2; encephalitis lethargica, 41; dysentery, 2; ophthalmia neonatorum, 91. There were no cases of cholera, plague, or typhus fever notified during the week.

The cases of small-pox were reported from the following counties:—Derby, 11 (Derby C.B.); Durham, 71 (Gateshead C.B., 2; Blaydon, 26; Chester-le-Street, 1; Ryton, 1; Whickham, 4; Chester-le-Street R.D., 7; Easington R.D., 7; Houghton-le-Spring R.D., 7; Lanchester R.D., 8; Sunderland R.D., 8); Northumberland, 8 (Newcastle-upon-Tyne C.B., 7; Castle Ward R.D., 1); Nottingham, 5 (Nottingham C.B., 1; Hucknall, 2; Huthwaite, 1; Basford R.D., 1); Yorks, East Riding, 4 (Kingston-upon-Hull); Yorks, West Riding, 6 (Sheffield C.B., 5; Rawmarsh, 1).

Deaths.—In the aggregate of great towns, including London, there were 3 deaths from enteric fever (1 in London); 50 from measles, 11 from scarlet fever, 40 from whooping-cough, 54 from diphtheria, and 73 from influenza. In London itself there were 15 deaths from diphtheria and 25 deaths of infants under 2 years of age from diarrhœa and enteritis.

VETERINARY RESEARCH.—The Council of the Royal College of Veterinary Surgeons has awarded the Steel Medal for Veterinary Research to Prof. S. H. Gaiger, F.R.C.V.S. Under the John Henry Steel Trust the Council of R.C.V.S. has power to award a medal once in three years as a reward for scientific or literary work of merit connected with the veterinary profession. Prof. Gaiger was until recently director of research in the Animal Diseases Research Association, Glasgow. He has done good work in connexion with several sheep diseases and has carried out some investigations into "grass disease" of horses. He has recently been appointed to the "William Prescott" Chair of the Care of Animals—Causation and Prevention of Disease, in the University of Liverpool.

The Services.

ROYAL ARMY MEDICAL CORPS.

Capt. G. O. F. Alley relinquishes the temp. rank of Maj. on ceasing to be empld. as a Dept. Asst. Dir. of Hygiene and Pathology.

Capt. F. C. Tibbs is granted the temp. rank of Maj. whilst empld. as a Dep. Asst. Dir. of Hygiene and Pathology.

Capt. H. Jacques to be Temp. Capt., and temporarily relinquishes the rank of Capt.

Capt. W. O. Tobias retires, receiving a gratuity.

TERRITORIAL ARMY.

Capt. J. A. Stenhouse to be Maj. (Prov.).

Lt. N. Braithwaite to be Capt., and Lt. J. C. MacKay to be Capt. (Prov.).

Lt. H. Miller (late R.A., T.A.), to be Lt.

ROYAL AIR FORCE.

Flight Lt. W. F. Wilson is promoted to the rank of Squadron Leader.

MEDICAL SERVICES IN INDIA.

The King has approved the relinquishment of their temporary commissions by Capt. Ramchander Kaushash and Lt. Shanker Ramchandra Joglekar.

The undermentioned, the relinquishment of whose temporary commission has been notified, is granted the rank of Capt: Nur Ahmed Quraishi, late temp. Capt.

Maj.-Gen. D. J. Collins, C.B., C.M.G., who has been officiating for Maj.-Gen. Robinson as D.M.S. India, has resumed his permanent appointment of D.D.M.S. Southern Command. Lt.-Col. A. K. Lauddie has handed over the charge of the District Jail, Ferozepore, to Dr. Jamna Das. Lt.-Col. H. W. Pierpoint, late residency surgeon, Bushire, has been appointed Superintendent of the X Ray Institute at Dehra Dun. Lt.-Col. G. McPherson has been appointed Civil Surgeon, Ahmednagar. Maj. G. Holroyd, on return from leave, is appointed Superintendent, Central Prison, Bareilly. Dr. A. Souza, Assistant Director of Public Health, United Provinces, has been deputed to Japan to participate in the tour of Health Officers in Japan organised by the League of Nations. Capt. G. D. Mahoutra officiates as O.C., Indian Station Hospital, and as Officer in Charge, Brigade Laboratory, Allahabad, during the absence on leave of Capt. M. L. Dhawan. Maj. J. L. Sen is appointed Civil Surgeon, Cachar, Assam. Maj.-Gen. R. Heard, C.I.E., is appointed President of the Bengal Council of Medical Registration, vice Col. R. P. Wilson resigned. Maj. C. H. P. Allen has been appointed Civil Surgeon, Sadiya. Dr. P. Gupta has been appointed Assistant Director of Public Health, Assam. Lt.-Col. J. H. Murray has been confirmed as I.G. of Prisons, Bombay Presidency, vice Lt.-Col. F. O. M. Mell retired. He has proceeded on leave, and Maj. E. E. Doyle, D.S.O., Superintendent, Central Prison, Yerrowda, officiates for him. Maj. W. E. Rees Williams, D.A.D.M.S., Southern Command, proceeds on a year's leave; Maj. A. C. Wood acts for him. Rao Bahadur Dr. P. V. Shikhare, Bombay Medical Service, who represented the Bombay Government at the International Congress on Child Welfare in Switzerland last July, has returned to India and taken over the appointment of Civil Surgeon of Thana. Col. H. Ainsworth, Inspector-General of Civil Hospitals, Bihar and Orissa, has returned from leave and resumed his substantive appointment.

Jail Reform.—A conference of I.M.S. officers, acting as I.G.'s of Jail, was held in Madras last month to consider jail reforms in India.

DEATHS IN THE SERVICES.

Lt.-Col. Robert Evans Stuart Davis, I.M.S. (retd.), who died on Nov. 25th in Belfast, received his first commission in the Indian Medical Service in 1882. He served with the Burmese Expedition 1886–87 (mentioned in despatches, medal with clasp), and was for some time a civil surgeon at Rangoon. He retired in 1910.

Lt.-Col. James Comeford Sullivan Green, late R.A.M.C., died at Airhill, Glanworth, Co. Cork, at the age of 64 on Dec. 1st. He graduated in medicine and surgery at Dublin University in 1883. Having previously served in the army as surgeon, he was appointed Major, R.A.M.C., in 1897. He accompanied the expedition to Manipur in 1891 (medal with clasp), served in Burma during the two following years, and afterwards took part in the operations of the Irrawaddy Column. In the South African War, 1899–1902, he took part in the actions at Elandslaagte, Reitfontein, and Lombards Kop. He was present at the defence of Ladysmith and served in the operations in the Transvaal, Orange River Colony, and Cape Colony (Queen's medal with five clasps and King's medal with two clasps).

Correspondence.

"Audi alteram partem."

EPSOM COLLEGE:

ROYAL MEDICAL FOUNDATION.

To the Editor of THE LANCET.

SIR,—Last Christmas I humbly approached your readers on a note of entreaty; this Christmas I approach them again on a note of gratitude, not unmixed with a hope of further favours to come. We have won the support of many additional annual subscribers but, like Oliver, I am still handing up my plate for more. A most gratifying response has come from the Panel Committees throughout the country; without any question of a *quid pro quo* they have just done what they could, and certainly one boy owed his success in the election last June to their activities. We are deeply indebted also to our many honorary local secretaries, some of whom have sent us most substantial returns, and to the great medical institutions—to the British Medical Association and its journal, to THE LANCET, and to the Medical Insurance Agency. So sedulously did the Pathological Society, under the leadership of Profs. Dean and Boycott, canvass new subscribers that they secured at the first attempt a high place on the list of successful candidates for the son of a recently deceased pathologist. The increased subscription list has enabled us to do many things a little better, and to give materially greater advantages to our 50 foundation scholars. In the school department substantial improvements in the salaries of some of our masters have been made, a very important step, for good teaching is a basic requirement.

In the matter of legacies and benefactions we have been very fortunate too; it is on these that we depend almost entirely for the immediate provision of the more costly improvements that we effect. The rebuilt chapel—a war memorial mainly provided by old Epsomians—was dedicated last February; a well-known old Epsomian has beautified it with a gift of handsome silver-plated candlesticks, vases, and an alms-dish, and has also been instrumental in securing a contribution of £1000, which by his wish is being spent on Gothic oak panelling for the chapel. Four generous donors contributed a total sum of £1300, which has permitted a complete transformation of the library and a good equipment of new books. We have promises of the bequest of parts of two valuable libraries, but let me hasten to say that we welcome suitable books from the living as well as from the dead. If each medical man were to give one well-bound book, what a library we should have!

Carefully husbanded legacies have enabled us to lay the foundation-stone of a new chemistry block by the hand of our President, LORD ROSEBERY, and we intend to open it next midsummer on Founder's Day; this is costing rather more than £10,000. At the same time we are taking in hand the concentration of a scattered, wasteful, and nearly worn out heating installation at a cost of some £5000, and we can see our way also to much-needed additions to the accommodation for washing and drying for the boys in the lower school—another £2000 or more. There we reach the bottom of our pocket until kind friends of the College can give or influence the giving of legacies or benefactions for other objects of which I venture to name a few.

The provision of a new infirmary would be a priceless boon to the school. The present infirmary is not constructed according to the requirements of modern medicine and nursing, and is uneconomical to run. Our medical officer has plans for a model school infirmary which would cost from £15,000 to £20,000. The vacated infirmary would give accommodation to 45 more boys from our waiting-list which now totals nearly 500, and this addition to the total numbers would make the school a much more economical unit

in many directions. What a chance for a wealthy patient as a thank-offering for life or limb! and for the Council to inscribe his name on it in perpetuity! More houses for married masters are a standing need, as also is an entrance lodge adjoining the College quadrangle. Some sportsman may be tempted to build a sports pavilion or to undertake the much-needed levelling of the lower school playing fields.

But in dangling these grandiose proposals before the eyes of potential benefactors we must not lose sight of our humble daily needs, whereby we educate and maintain our foundation scholars free of cost and distribute also many pensions; if funds were available we should like to increase these pensions, owing to the present high cost of living. One guinea annually, or a single donation of ten guineas, makes a governor and gives ten votes at each election in June of foundationers and pensioners, and each additional guinea gives ten votes more. We already relieve much distress in the profession; will you help us to relieve much more?

Subscriptions and donations may be sent to the Secretary, Epsom College Office, 49, Bedford-square, London, W.C. 1, who will be glad to give any information and welcomes personal visits at any time.

I am, Sir, yours faithfully,

RAYMOND CRAWFURD,
Chairman of the Council of Epsom College.

December, 1925.

TELLING THE TRUTH.

To the Editor of THE LANCET.

SIR,—In his letter of Nov. 28th on "Telling the Truth," "Croix Rouge" fails to distinguish between a *broad* and a *pure* mental reservation. He is also mistaken in the matter of Jesuit teaching. According to all moralists a lie, falsehood, or untruth is the act of *speaking against one's mind*. To borrow from a friend, saying: "I will pay you back," but adding in your mind "if I have any money," is to use words in a limited meaning without giving any outward clue to the limitation. This the Jesuits do not call diplomacy, but pure mental reservation, and that, to quote Father Joseph Rickaby, S.J. "is in nothing different from a lie, and is wrong as a lie is always wrong."[1] By that definition the dealer in antique furniture who says, "I guarantee that this is old," laying his hand on the genuine portion of a faked chair, is merely a skilled liar.

A *broad* mental reservation is different. Here the spoken words correspond to the thought in the mind —*secrets apart*—and therefore no lie is told. The reader may ask how it can be anything but *speech against the mind* when the mind thinks *yes* and the tongue says *no*. The answer is that in those cases where broad reservation is permissible the thought in the mind is "secrets apart—no," and that the word spoken is not to be taken as the whole locution.

"The word is an *annotated text; nay*, in the body of the page, with *secrets apart* inscribed in the margin. The adequate utterance is the whole page, text and gloss together; that speech answers to the thought in the speaker's mind; therefore it is no lie. The essential requisite is that the gloss, *secrets apart*, be not written in the speaker's private mind, but be outwardly and publicly manifest in the matter spoken of, which must be one that clearly admits of secrets, and in the circumstances of the speaker, who is driven into a corner, and obliged to answer something, and yet cannot by any prudent man be expected to answer out of the fullness of all the knowledge that he may possibly possess." [2]

The next point to seize is that—

"broad mental reservation is permissible only as a last resort, when no other means are available for the preservation of some secret which one has a duty to others, or grave reason of one's own, to keep."

What, then, are those secrets? The Jesuits teach that there are four kinds of secrets. *Natural* secrets are all a man's own private history, and all that he learns by observation of the similar private history of his neighbour. Next come secrets of *promise*, as when a man has found out something about his neighbour and the neighbour gets him to promise not to publish it. These two kinds of secrets must be revealed on the demand of an authority having the right of inquiry into matters touching on the secret. In another category is the secret of *trust*, confided to a lawyer or to a physician in the practice of his profession. The secret of trust is privileged. It is to be defended by silence, and where that be ineffective by broad reservation. For that reason I would not hesitate to tell "the pretty," or, may I add, the plain "wife of a faithless husband" that he had become infected through drinking out of a glass. Indeed, if Venus followed Bacchus the statement would be an excellent example of broad reservation. Last are the *secrets of confession*, which are absolutely inviolable, and in the Jesuit Church at Farm-street is the statue of a man who was martyred in this cause. The Jesuit died under torture; the seal of confession was unbroken.—I am, Sir, yours faithfully,

HALLIDAY SUTHERLAND.

Wimpole-street, W., Nov. 30th, 1925.

[1] Moral Philosophy, 1918, p. 233.
[2] Loc. cit., p. 234.

To the Editor of THE LANCET.

SIR,—The Psalmist said in his haste, "All men are liars." "Croix Rouge," in your issue of Nov. 28th, deliberately admits the truth of the statement. There appear to be exceptions, but the statement is, in this day, so nearly true that I would not trouble to controvert it. He, however, unlike the Psalmist, seems to regard this state of affairs as justifiable. There I emphatically disagree with him. To quote and translate a passage from Homer, "He is hateful to me as the Gates of Hades who conceals one thing in his mind and says another."

Every discreet man will, of course, very frequently conceal what is in his mind, but he need not, and should not, say another thing with intent to deceive. A lie is a false statement deliberately made with intent to deceive the hearer. Polite, or "white" lies as they are called, are merely conventional methods of veiling our actual feelings which often ought to be concealed. Lies told from motives of self-interest are in a totally different category and are sometimes even criminal. There is, no doubt, something to be said in favour of the kind of lies to which "Croix Rouge" seems especially to refer as being permissible. Let us take an example. A young woman consults a doctor about a tumour in her breast which he finds to be a cancer. To tell her that it is a cancer will do no good and will probably do considerable harm. He should, therefore, not tell her the nature of it if he can avoid it, but should, for his own protection, be provided with evidence to prove that he has made a diagnosis of cancer. Unfortunately, the patient, ignoring the fact that in these cases "ignorance is bliss," may insist on a definite answer to the question whether it is or is not a cancer. According to "Croix Rouge" he should say it is not a cancer. He then has to advise complete removal, and will have to tell more lies to try to persuade the patient. In order to succeed he may think it advisable to tell the truth to responsible relatives. He is in either case exposed to grave disaster. The patient, on the strength of his positive assurance, may absolutely refuse operation, and if he weakly yields he will later on be threatened with an action for damages for negligently causing the patient to lose the chance of cure. If he bravely admits that he has lied, or if the truth confidentially communicated to others has leaked out (as often happens), his patient, in a condition of mixed fury and despair, will probably tell him that as he has lied to her she can never trust him again and will change her medical adviser. He will then recognise that though the "bread of deceit is pleasant to a man it is afterwards as gravel in his mouth." It must also be remembered that although lies are sometimes undetected, the most skilful liar will soon have some of his lies exposed; and what value can be attached to the statements of a man when we know that he

will lie whenever he thinks it expedient to do so. In another connexion, what scientific value can be attached to the results of the researches of the ablest man if he is known to be a liar? It is a matter of good taste to say of the dead "nil nisi bonum," but it is a matter of honour and duty to say to the living "nil nisi verum."

I am, Sir, yours faithfully.

Nov. 30th, 1925. HUGH WOODS.

To the Editor of THE LANCET.

SIR,—*Aliquando bonus dormitat Homerus.* Your sub-editor—the editor himself is unthinkable—must have been acting Homer to pass the poison gas carried by "Croix Rouge." There are in every large profession blacklegs and outsiders whose morality and methods are beneath contempt.

I am, Sir, yours faithfully,

Dec. 7th, 1925. VERITAS.

RHEUMATISM: WANTED, A NEW NOMENCLATURE.

To the Editor of THE LANCET.

SIR,—Your issue of Dec. 5th contains a report of the joint meeting of the International Society of Medical Hydrology and the Section of Balneology held at the Royal Society of Medicine on Nov. 27th. The lay press reported this meeting very fully. A survey of these latter reports and conversation with many intelligent laymen brings out the interesting fact that what chiefly interested the public in this discussion was the impression that rheumatism not only cripples thousands of people in every European country, but is further responsible for an enormous death-rate owing to the frequency with which it causes heart disease.

The distinction between rheumatic fever, a disease of children which never causes chronic joint changes and frequently provokes serious cardiac lesions, and rheumatoid arthritis, a disease of adults which tends to cause chronic joint changes and very seldom affects the heart at all, would appear to be too fundamental and established to require emphasis to-day. The importance of each of these diseases is so great that confusion concerning them is deplorable, but it is no exaggeration to say that a discussion of one or the other, whether at a meeting or in the columns of a medical journal, never takes place without the two being jumbled together in almost hopeless disorder. Is not this essentially a case where chairmen and editors should exercise their powers of veto in the hope of making discussion fruitful?

If the unanimity of our text-books and our teaching is not sufficient to make the matter clear, it becomes open to question whether we should not adopt a new nomenclature. "Rheumatic fever" and "acute rheumatism" are unquestionably the terms responsible for the confusion. It is perhaps time that a new name were adopted for this disease, preferably one which would incorporate a conception of its serious cardiac effects and cease to emphasise its quite trivial articular manifestations.

I am, Sir, yours faithfully,

London, Dec. 5th, 1925. T. IZOD BENNETT.

"A DISCLAIMER."

To the Editor of THE LANCET.

SIR,—Is there any real necessity for the publication of disclaimers such as that which appears in THE LANCET of Dec. 5th, p. 1198? Is every medical man who delivers a public lecture to be prohibited from allowing his name to be announced to his prospective audience? Surely this is a *reductio ad absurdum*. I write this letter for information, not for advertisement!—I am, Sir, yours faithfully,

LEONARD F. BROWNE.

Harley-street, W., Dec. 7th, 1925.

LANCASHIRE AND THE SPAHLINGER TREATMENT.

To the Editor of THE LANCET.

SIR,—On p. 1203 of your issue of Dec. 5th one reads the following: "Dr. Thomas Watts, M.P. (Withington), said that he and his colleagues who went to Geneva traced a definite 80 per cent. absolute recoveries, which was very different from 14 per 1000 in this country. . ." One would like to know the basis of his statement that only 1·4 per cent. of recoveries are to be expected from sanatorium treatment. It is obviously a ludicrous inaccuracy. Is it, I wonder, the printer's or the speaker's error?

I am, Sir, yours faithfully,

F. G. CHANDLER, M.D., F.R.C.P.

Park-square West, N.W., Dec. 5th, 1925.

*** Our report was published as it was received and the figures given by the speaker will be generally considered to require explanation.—ED. L.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND AND ITS MEMBERS.

To the Editor of THE LANCET.

SIR,—The request on the part of the Members of the College (Conjoint Diplomates) for an improved status by the grant of a voice in the affairs of their College is only natural. The Member comes in contact with disease in its early stages. Upon his outlook, discrimination, and powers of diagnosis depends the quantum of benefit received by the patient. Early diagnosis is of priceless benefit to the public. It can be truthfully said that to be a good family doctor is as difficult, if not more so, than to be a specialist. Is the benefit of his skill likely to be developed by men who have an inferior status? An improved status would stimulate the Member to greater efforts for the common weal. The gulf between the general practitioner and specialist would be lessened, which, I submit, would be in the interest of common humanity.—I am, Sir, yours faithfully,

F. W. COLLINGWOOD.

Royal Colonial Institute, Northumberland-avenue, London, Dec. 8th, 1925.

DIABETES AND OPERATION.

To the Editor of THE LANCET.

SIR,—In his article on Diabetes and Operation, which appears in THE LANCET of Dec. 5th, Dr. O. Leyton draws attention to the fact that a general anæsthetic usually makes the diabetic condition much more grave and states that, in his experience, it is extremely rare for a general anæsthetic, other perhaps than nitrous oxide and oxygen, not to lead to a definite deterioration of the carbohydrate metabolism in cases of diabetes mellitus. We have investigated this question and find that if appropriate treatment be carried out before, during, and after operation, as described by us in THE LANCET (1924, ii., 647), no such deterioration will occur. In only one of our cases was there evidence of the diabetic condition becoming more grave, although ether was invariably used as an anæsthetic. The other cases are now free from glycosuria. Since this date we have advised on the question of operation in many other diabetics, with results that have been uniformly good.

We are, Sir, yours faithfully,

H. S. PEMBERTON.

Liverpool, Dec. 8th, 1925. L. CUNNINGHAM.

HOSPITAL CONTRIBUTIONS FROM SHEFFIELD CITY COUNCIL.—Under the Public Health Act, 1925, which came into operation two months ago, the Sheffield City Council was empowered to make contributions to the Hospitals "Penny-in-the-Pound" scheme. It has now decided to give one-third of the amount contributed by 5000 of its employees, and it is believed that the total will reach about £1500 per annum.

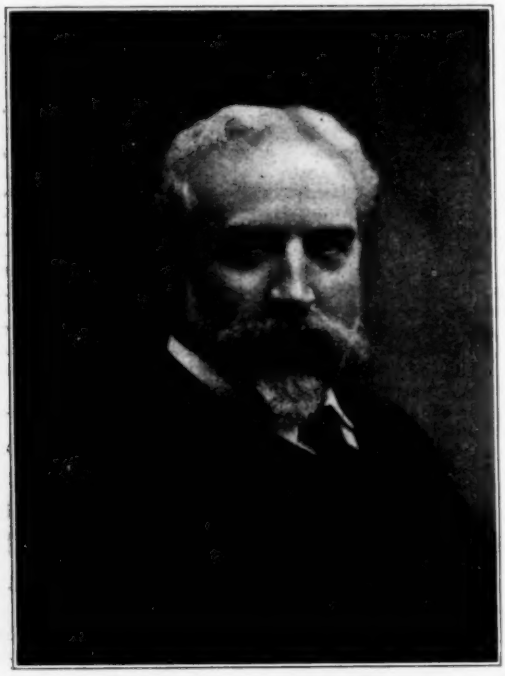
Obituary.

SIR JOHN MACALISTER, F.S.A.,

LATE SECRETARY AND LIBRARIAN OF THE ROYAL SOCIETY OF MEDICINE.

WE have announced already the death of Sir John MacAlister, which occurred on Tuesday, Dec. 1st, at his residence in Finchley-road, in the 70th year of his age. The sad event could not have been an unexpected one for any of his numerous friends and acquaintances, while the medical profession at large were prepared for this sequel to his recent resignation, owing to seriously failing health, of his official position at the Royal Society of Medicine.

John Young Walker MacAlister was born in 1856 of an ancient Scottish family. He was educated at the High School, Liverpool, and later was for three years a medical student in the University of Edinburgh. Shortly, however, before completing the



SIR JOHN MACALISTER.

curriculum his health broke down, and he was advised to choose a profession of a less exacting physical nature, with the result that he became sub-librarian of the Liverpool Library. It soon became clear that he had both the love of order and the love of books necessary to be a valuable librarian, and in 1880 he was appointed chief librarian to the Leeds Library, where he had a full opportunity for displaying his exceptional abilities; for new buildings were in the course of erection at Leeds, and MacAlister's designs were followed in regard to a considerable part of the internal structure. There was already at Leeds a large collection of books, and these were catalogued in accordance with the new librarian's scheme of classification, which was afterwards adopted under his management in the library of the Yorkshire College, the constituent college of the Victoria University, which formed the origin of the University of Leeds. With this record it is not surprising that in 1887 the National Liberal Club in London should have nominated him as the librarian of the Gladstone Library of the Club, but his tenure of the position was a brief one. It gave him the opportunity of personally meeting Gladstone, and hearing from the great statesman's own mouth the ideas on library arrangement which personally appealed to him; but within a few months the post of librarian and secretary at the Royal Medical and Chirurgical Society fell vacant, and MacAlister, throughout his life deeply interested in all medical activities, became a successful applicant for the vacancy.

From this time forward MacAlister's life was lived in association with that society and with the great body, the Royal Society of Medicine, into which it later developed, and in the Transactions of the Royal Society of Medicine there will be found from his own pen a modest but clear account of the prominent phases in a career of eager and successful activity. The Royal Medical and Chirurgical Society had its home at 53, Berners-street, when MacAlister became its executive officer, the rent was £14 a year, the lease had 13 years to run, and no preparation had been made either to meet the fifty-fold rent which with perfect reason would be demanded shortly, while there had been no sinking fund provided for dilapidations. The number of Fellows was about 800, and, to quote MacAlister's own words, "the subscriptions barely made ends meet, and a new chimney-pot caused a deficit in the annual accounts." When, after looking closely into the situation, he spoke of it to prominent members of the Society, no one seemed very interested; one of those to whom he went for advice suggested doubling the subscriptions, while another said that if that was done half the members would resign, and the new official was left more or less to find a way to salvation for persons apparently resigned to impending disruption. Many may remember what happened. MacAlister conceived the idea that the Society might become the owners of premises of such a character that portions could be let off, leaving substantial premises for the Society at no great annual cost. A suitable house, however, had to be obtained, while a capital sum would be necessary before it would be possible to enter into possession of such a building. MacAlister found a large house in Hanover-square, which had stood empty for some years, and the sum of money demanded for it seemed to him moderate. He immediately placed the whole scheme before Sir Andrew Clark, the President of the Society at the time, and with characteristic energy Clark, having approved the idea generally, called for details, asked pertinent questions, promised a decision at a meeting to be held early the following morning, discussed the plans at the meeting, and headed a proposed debenture list with a cheque for £10,000. The prosperous growth of the Royal Medical and Chirurgical Society, which immediately followed on the move to 20, Hanover-square, would have probably filled to satisfaction the days of most secretaries. But actually before the house was rehabilitated so as to accommodate the lodgers, whose pleasant duty it would be to pay the rent, MacAlister, with Sir Andrew Clark as his backer, produced a scheme for the amalgamation of the medical societies of the metropolis, whereby all the strength and solidarity of the combination would be ensured for every body which joined, while economy would be achieved in personnel, and overlapping activities could be avoided. Whether the medical profession or the various metropolitan societies were in these early days prepared for the scheme is doubtful, but, anyhow, it fell into abeyance with the premature death of Sir Andrew Clark. The delay, however, was not long, for in 1905 MacAlister submitted to Sir Richard Douglas Powell, then President of the Royal Medical and Chirurgical Society, a revised scheme for amalgamation which had been ventilated 12 years previously. This scheme received the approval of a large group of leaders of the medical profession within and without the metropolis, but the interests involved were numerous and not always identical, and the negotiations extended over two years or more. During this time, in the first place, membership of the Royal Medical and Chirurgical Society gained in numbers until it became obvious that a new house

would have to be obtained, while, in the second place, the idea of fusion had become familiarised to many of the bodies concerned by the fact that a considerable group of them were already the sub-tenants of the Royal Medical and Chirurgical Society. MacAlister was the mainspring of all the business, he initiated the negotiations, carried them on, and suggested the conditions by which they should be determined, and when a suitable site for a Royal Society of Medicine was found at the corner of Wimpole-street and Henrietta-street he performed financial miracles in getting money with which to buy and finding arguments for securing good terms.

The following tribute from Sir StClair Thomson, the President of the Royal Society of Medicine, continues the story of MacAlister's connexion with the Society, showing what an astonishing change in the academic life of the medical profession in the metropolis has been effected through MacAlister's organising talents. Sir StClair Thomson writes :—

"It was chiefly through his organising talents that the Medical and Chirurgical Society moved to a larger house in Hanover-square, and there amalgamated itself with 18 other distinct medical societies of London into the now flourishing Royal Society of Medicine. MacAlister's indomitable energy was the chief factor in erecting the handsome home for this great amalgamation at the corner of Wimpole-street and Henrietta-street. He who had commenced as librarian to a society of 745 Fellows, with an income of about £1600 per annum, lived long enough to be secretary of a society of 4000 Fellows, with an income of £20,000 a year, and possessing, among other valuables, the largest medical library in the British Empire.

"This fusion of 18 separate and independent societies was really a Herculean work, if it is remembered how many conflicting interests and jealousies had to be overcome. Many efforts at the task had failed since the foundation of the original Medical and Chirurgical Society in 1805. It was nearly successful in the time of Sir Andrew Clark, but the untimely death of that great physician arrested progress until it was finally accomplished in the year 1907, when Sir William Church, ex-President of the Royal College of Physicians, became the first President of the Royal Society of Medicine. This great achievement was doubtless accomplished because MacAlister was a man with imagination, was absolutely devoid of selfishness, and was single-hearted in his devotion to a great idea. Fortunately he was a man endowed with a serene and equable temperament which allowed his Celtic imagination to be controlled by the more rational spirit of his Southern friends. If any project of his was occasionally turned down as visionary or impracticable, he was neither resentful nor cross about it.

"His handsome presence will not easily be forgotten. He was twice threatened with tubercle. He suffered from other troubles, for the relief of which he was ever grateful to his old friend, Sir Arbuthnot Lane. But he never looked the invalid. Broad-shouldered and erect, with his handsome head of hair and curling beard, with the refined straight nose and the high cheekbones of the Celt, his one grey and his other blue eye added an increased charm, while his clear diction and low, musical voice had an attractive and caressing effect. In his prime there was something about him suggestive of the Viking type, with which much of the Highland strain on the coasts of Scotland is mingled. This same Celtic strain gave him a love of hospitality, a sociability, a courtesy, a facility of approach, and a pliability which is sometimes wanting in the Lowlander. Possibly it also accounted for a certain respect for the ceremonial and bravura of public affairs, and for the simplicity and frugality of his private life. He was known to and beloved by successive generations of medical men. There is hardly a consultant or specialist in London to whom he was not a friend and a helper. Outside the profession he was ready to join in any undertaking of public interest, and particularly those concerned with books and libraries. His catholic tastes were shown by his membership of the Athenæum, Garrick, and Bath Clubs, and his life-membership of the Savage Club. He was, in Dr. Johnson's true meaning of the word, 'a very clubbable man.'

"The Council intend to hang his portrait in the entrance hall. Fellows will recognise in this fine portrait that the artist has not omitted to indicate, by the surroundings, his love of books and libraries, and his great share in the erection of the Society's house. The cigar in his hand indicates his devotion to 'my lady Nicotine' and no sweeter incense could be burnt before his picture than the tobacco smoke which will in future curl up round it during the tea hour. It is one of the curious, though not uncommon, coincidences of our great country that MacAlister and the last President to be associated with him both came from small neighbouring villages on the shores of Loch Fyne, and yet it was not in Argyllshire, but in Berners-street that they met for the first time.

"When I saw him shortly before he died he told me he had not smoked for two days, and then, as Mistress Quickly said, 'I knew there was but one way.' He was able still to take great interest in the most recent doings of the Society, and gave voice to his well-known chuckle when I told him that the annual dinner had been so managed that it had left us with a profit instead of the usual deficit. He had neither distress nor pain, for the devoted attentions of his family, his friends, and his faithful attendant, Dr. Moreland McCrea, had smoothed the last stormy passage. His only complaint and his last words were : 'I am only tired—very tired—always tired.'

"His best and most enduring memorial will be the house of the Society he served so long and faithfully. As was said of Sir Christopher Wren : *Si monumentum requiris, circumspice.* If those interested care to look up 'Who's Who' they will see that he has quizzingly recorded that his chief recreation was 'sleeping'! After life's fitful fever our friend sleeps well."

Outside the Royal Society of Medicine MacAlister was well known as a librarian. He was instrumental in founding the library which is now the organ of the Bibliographical Society. Nearly 40 years ago he became honorary secretary of the Library Association, and he played a prominent part in securing the passage of the Act which in 1892 regularised the conduct of public libraries. During the war MacAlister acted as secretary of one of the War Office committees, and in that capacity organised a service to afford surgical and medical assistance in the casualties of the metropolis arising out of air raids. In 1920 he was knighted, and his numerous friends testified their pleasure at the State recognition of his services by making him the guest at a very large and successful banquet, and presenting him with a testimonial.

Sir John MacAlister married Elizabeth, daughter of George Batley, of Blackhall, Edinburgh, by whom he had two sons. To them and to Lady MacAlister we tender our sympathy in the loss which they have sustained.

RICHARD JOCELYN SWAN, M.R.C.S. ENG., L.S.A., L.M. DUB.

THE death took place at Wallington on Dec. 7th of Dr. Richard Jocelyn Swan at the age of 76 years. He was the second son of the late Dr. John Wright Swan and was born in 1849 at Ballyragget, Co. Kilkenny. He studied medicine at Steevens' Hospital, Dublin, where he was awarded the Cusack Surgical Clinical Prize in 1868. After qualification at the Royal College of Surgeons of England, he was appointed assistant obstetric physician to Steevens' Hospital, relinquishing this post to take up general practice first in Northleach, Gloucestershire, later in Lincolnshire, and from 1885 in South London. For upwards of 25 years Dr. Jocelyn Swan acted as consulting surgeon to the tramways staff of the London County Council. He took a keen interest in the affairs of the Irish Medical Schools and Graduates Association, of which he was treasurer for 20 years and president in 1913. He also took an active interest in the Volunteer Army, both in the Lincolnshire Regiment and in the 1st Surrey Rifles, and during

the Great War was on the active staff of the Belmont Hospital, Sutton.

Dr. Jocelyn Swan leaves a widow, the daughter of Dr. Robert Harper, of Holbeach, Lincolnshire, by whom he had two sons and one daughter.

THE LATE SIR ROBERT CHARLES BROWN.

THE career of Sir Robert Charles Brown, of Preston, was briefly set out in THE LANCET of Nov. 28th (p. 1142). Dr. F. W. Collinson, his colleague on the staff of the Preston Royal Infirmary, writes to point out Sir Charles Brown's life-long services to that institution. He assisted in the collection of money for the erection of the original building. He was on the staff from the time the infirmary was opened in 1870 to his death, first as house-surgeon, then as honorary physician, and, for a number of years, as consulting physician. After inspecting the best in use elsewhere, he built, entirely at his own expense, an up-to-date operating theatre with all the necessary appurtenances. He provided isolation wards, conservatories, and many other things for the comfort and welfare of the patients. When X rays were first introduced, he defrayed the cost of an outfit, which was the best of its kind at the time. In all, his gifts to the infirmary amounted to more than £10,000. He was, adds Dr. Collinson, a man of simple tastes with no desire to spend money upon himself, and frequently denying himself that he might have more to bestow on others. In his later years he often spoke of having "found the value of money now that he was giving it away."

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, DEC. 2ND.

Pharmacists in the Army.

Mr. ALFRED WILLIAMS asked the Secretary of State for War whether he could state the number of pharmacists who had specially enlisted as such during the years 1922, 1923, and 1924; and what rank was accorded to pharmacists on enlistment.—Sir L. WORTHINGTON-EVANS replied: No pharmacists were enlisted in the regular army during the years in question, but five were enlisted in the Royal Army Medical Corps (Supplementary Reserve) during 1924. All pharmacists are enlisted in the rank of private.

Inoculation of Soldiers.

Mr. COMPTON asked the Secretary of State for War on what grounds it was made compulsory for recruits on enlistment to be vaccinated on one arm and inoculated on the other at the same time and for a second inoculation to be performed within ten days.—Sir L. WORTHINGTON-EVANS replied: The hon. Member is under a misapprehension. Soldiers are not inoculated until they are about to proceed on foreign service.

Vaccine Lymph.

Mr. GROVES asked the Minister of Health whether oil of cloves was used in the preparation of vaccine lymph.—Mr. N. CHAMBERLAIN replied: The answer is in the affirmative.

THURSDAY, DEC. 3RD.

Closing of Pensions Hospitals.

Colonel ENGLAND asked the Minister of Pensions how many Ministry of Pensions hospitals had been closed within the last 12 months; and how many ex-Service men requiring treatment were awaiting admission to the existing hospitals at the present time.—Major G. C. TRYON replied: Seven hospitals have been closed within the past 12 months. The average number of men awaiting admission to hospital is slightly over 400 at any one time. This compares with an average weekly number of 480 admissions to and 470 discharges from the hospitals. There is an average floating balance of 460 beds always available.

Orpington Hospital.

Captain BOWYER asked the Minister of Pensions whether, in view of complaints regarding the treatment of neurasthenic ex-Service men at Orpington and at other hospitals, he would definitely state that no economy had been, was being, or would be, practised at the expense of these ex-Service men.—Major G. C. TRYON replied: I can unhesitatingly give my hon. and gallant friend the most complete assurance to this effect.

Pensions Ministry Hospitals.

Mr. DENNISON asked the Minister of Pensions how many institutions there were under the control of the Ministry for the treatment of pensioners and where they were situated; and what was the charge made against pensioners' allowances at the institutions under his control for the treatment of the mentally afflicted.—Major G. C. TRYON replied: There are 23 institutions under the entire control of the Ministry, and three where that control is partial only. With regard to the latter part of the question, the charge, if any, made against a pension or allowance during treatment, either in a public institution or one controlled by the Ministry, is determined by the provisions of Article 6 of the Royal Warrant and of the Lunacy Acts. In those cases where any charge is made the maximum is 37*s.* 6*d.* a week. The following are the institutions referred to: Bellahouston, Glasgow; Craigleith, Edinburgh; Edenhall, Musselburgh; Castle Leazes, Newcastle-on-Tyne; Becketts Park, Leeds; Kirkburton, Huddersfield; Grangethorpe, Manchester; Mossley Hill, Liverpool; Maghull, Liverpool; Chepstow, Wales; Rookwood, Cardiff; Watson Home, Birmingham; Harrowby, Grantham; Saltash, Cornwall; Coombe Park, Bath; Fernbank, Roehampton; Latchmere House, Richmond; Ewell, Surrey; Orpington, Kent; Rotherfield Court, Henley-on-Thames; The Spring, Hanwell; Leopardstown Park, Dublin; Blackrock, Dublin; and (under partial control) Highbury, Birmingham; Roehampton; and Sidcup.

Pensioners and Treatment.

Mr. GROVES asked the Minister of Pensions what was the number of pensioners in receipt of treatment with allowances on Nov. 1st, 1923, Nov. 1st, 1924, and Nov. 1st 1925, respectively; and what was the number of men in receipt of treatment and training on the same dates and the number of pensioners who were on home treatment without allowances.—Major G. C. TRYON replied: The number of pensioners in receipt of medical treatment with allowances was: 33,019 on Nov. 1st, 1923; 30,519 on Nov. 1st, 1924; and 26,148 on Nov. 1st of the present year. The number of men in receipt of treatment and training on the same date was: 3064 in 1923 and 1313 in 1924. Owing to the diminished need for further vocational training and the consequent closure of the centres during 1924 and the present year, only 12 men who are completing a course of instruction still remain in the centres. I regret that I have no information as to the last part of the question.

Bursitis as an Industrial Disease.

Mr. TINKER asked the Home Secretary if a decision had been reached in regard to the inclusion of bursitis in the schedule of industrial diseases for miner's beat knee.—Sir WILLIAM JOYNSON-HICKS replied: Proposals for amending the present descriptions in the schedule of miner's beat knee and miner's beat elbow were referred by me in July last to the Mining Association and Miners' Federation for observations, but neither body has so far furnished me with its views on the subject and at the present moment when they are so much occupied with other matters I should be reluctant to press for a reply.

Food Preservative Regulations.

Mr. BARNES asked the Prime Minister whether, in view of the importance of the issues which would be involved if the Public Health (Preservatives, &c., in Food) Regulations, which were issued on 4th August, 1925, were put into operation, he would give time to a discussion of them in this House at an early date.—Mr. BALDWIN replied: I regret that owing to the pressure of business it is impossible to allow time for such discussion this session.

Welfare of Children.

Mr. DAY asked the Minister of Health if he was aware that no provision existed for the medical welfare of children over 2 years of age and under 5 years; and, in view of the danger of children between these ages being exposed to the risk of preventable diseases, would he cause arrangements to be made in order to close the present gap.—Mr. NEVILLE CHAMBERLAIN replied: No, Sir. The arrangements made under the Maternity and Child Welfare Act do not exclude any category of children below school age, and my department loses no opportunity of impressing upon the local authorities in charge of maternity and child welfare schemes the importance of maintaining a continuous supervision over children up to the age at which they attend school.

Unhealthy Housing Areas.

Mr. GROTRIAN asked the Minister of Health whether he was aware that local authorities were being deterred from representing areas as unhealthy owing to the unfairness of paying nothing for buildings which in themselves were unexceptionable but which happened to be within an unhealthy area; and whether he would consider the repeal of Section 46 of the Housing Act, 1925, and the putting into force of the recommendations of the report of the Unhealthy

Areas Committee, 1921.—Mr. NEVILLE CHAMBERLAIN replied: I cannot accept the suggestion made in the first part of the question that no compensation is paid for buildings which in themselves are unexceptionable. Payment on the basis of site value is prescribed by the Act for buildings which are included in a scheme on account of their sanitary condition or because the premises are dangerous or prejudicial to health. I am closely watching the operation of this section, but I am not in a position to make any statement as to future legislation at the present time.

Powers of the General Medical Council.

Colonel WOODCOCK asked the Minister of Health whether his attention had been called to the recent action of the General Medical Council in striking off the Medical Register one of its members for what was described as infamous conduct in a professional respect; whether he was aware that the General Medical Council was now composed wholly of medical members; and whether, seeing that the statute did not require that the General Medical Council should be composed exclusively of medical men, he would in nominating members of the Council take steps to add members representing the public.—Mr. NEVILLE CHAMBERLAIN replied: The answer to the first and second questions is in the affirmative, except that the practitioner to whom I understand my hon. and gallant friend to refer was not a member of the General Medical Council. The answer to the third question is that members of the Council, other than those representing certain bodies specified in the Acts, are nominated by His Majesty with the advice of his Privy Council. The Minister departmentally responsible is the Lord President of the Council.

Colonel WOODCOCK: Will he set up a committee to investigate the procedure of the Council and its relation to modern usage and methods.—Mr. CHAMBERLAIN: I am not the Minister departmentally responsible.

The General Medical Council and Dr. Lloyd.

Sir ROBERT GOWER asked the Minister of Health whether his attention had been called to the action of the General Medical Council in removing the name of Dr. William Lloyd from the Register of medical practitioners for having given treatment to certain patients; and whether he would consider the necessity of introducing legislation restricting the power of the General Medical Council to strike off the Medical Register the names of practitioners who had not been proved to be guilty of actual misconduct and giving him power to replace on such Register the name of any person which, in his opinion, had been capriciously or unreasonably removed. —Mr. NEVILLE CHAMBERLAIN replied: I have consulted my noble friend the Lord President of the Council on this matter as responsibility rests with him and not with me. The name of Dr. William Lloyd was not, as I understand it, removed from the Medical Register by the General Medical Council for having given treatment to certain patients, but for having sought to obtain patients and promote his own professional advantage by unprofessional methods. I am furnishing my hon. friend with a copy of the charge on which Dr. Lloyd was summoned to appear before the Council. In answer to the second and third parts of the question I am advised that the General Medical Council have statutory power to direct the erasure from the Medical Register of the name of a practitioner who has been convicted in England or Ireland of any felony or misdemeanour or in Scotland of any crime or offence, or has, after due inquiry by the Council, been judged to have been guilty of infamous conduct in a professional respect. I am further advised that there is no evidence that the Council have directed the erasure of the name of any practitioner without his having been thus convicted or thus judged after due inquiry to have been guilty of infamous conduct in a professional respect as defined by Lord Justice Lopes, Lord Justice Davey, and Lord Esher. In regard to restoration, it has been the practice of the Council to replace names on the Medical Register when they are satisfied that such a course will not be prejudicial to the public interest. My noble friend has no reason to believe that the Council have acted capriciously or unreasonably, and as at present advised does not consider that the introduction of further legislation is necessary, there being already power under the relevant Acts for the Privy Council to issue its directions to make good any defaults in practice of the General Medical Council.

Committees and Panel Practitioners.

Lieut.-Commander KENWORTHY asked the Minister of Health whether he would state the total number of committees of inquiry convened, since these committees had power to award costs, for the purpose of inquiring into a practitioner's fitness to remain on the panel; the number of cases in which the practitioner was unsuccessful in rebutting the suggestion that he was unfit to remain on the panel; and the amount of costs awarded to the practitioner in each case. —Mr. NEVILLE CHAMBERLAIN replied: Since the Inquiry Committee referred to have had power to award costs, 34 inquiries have been held. In 12 cases the inquiry resulted in the practitioner being removed from the medical list, and in one case he was permitted to resign in lieu of removal. In five of these 13 cases no order was made as to costs. In 15 of the remaining cases the facts disclosed were held to justify requiring the practitioner to pay the costs or the imposition of other penalties. In three cases no order was made, and in three cases costs were awarded to the practitioners, the amounts being £35 3*s.* 4*d.*, £59 4*s.* 2*d.*, and £1 4*s.* respectively.

Poor-law Relief.

Mr. NEIL MACLEAN asked the Minister of Health the number of people receiving poor relief in England and Wales at the end of June, August, and October, 1925.—Mr. NEVILLE CHAMBERLAIN replied: Excluding lunatics in county and county borough asylums, casuals, and persons in receipt of domiciliary medical relief only, the number of persons in receipt of Poor-law relief in England and Wales on the last Saturday in June was 1,105,970, on the last Saturday in August, 1,200,599, and on the last Saturday in October, approximately 1,270,186.

Deaths from Tuberculosis Contracted on Active Service.

Mr. PIELOU asked the Minister of Health the number of ex-Service men who had died during the last ten years from tuberculosis contracted while on active service.—Major G. C. TRYON replied: During the ten years up to Nov. 30th about 21,000 men pensioned for tuberculosis have, I regret to say, died from that disease.

FRIDAY, DEC. 4TH.

Beds in Military Hospitals.

Brigadier-General CHARTERIS asked the Secretary of State for War the present number of equipped beds in military hospitals under the control of the War Office; and the average daily number of patients in these hospitals during the current year.—Sir L. WORTHINGTON-EVANS replied: The information is as follows: number of equipped beds at home and abroad on Oct. 31st, 1925, 6751. Average daily number occupied during the year ending Oct. 31st, 1925, 3567.

Brigadier-General CHARTERIS asked the Secretary of State for Air the present number of equipped beds in hospitals under the Air Ministry; and the average daily number of patients in these hospitals during the current year.—Sir S. HOARE replied: The answer to the first part of the question is 1586; to the second, 528. Of the 1586 equipped beds, 1139 are in hospitals in Iraq and Palestine which cater for the whole garrisons—i.e., Army as well as Air Force, and British as well as Indian troops, and, in Palestine, the British gendarmerie in addition. I may add that it is necessary to provide beds considerably in excess of the average occupation in order to be in a position to cope with epidemics, casualties, seasonal illnesses, and the special conditions under which the forces in the Middle East are serving, but their number is, and will continue to be, brought under constant review.

MONDAY, DEC. 7TH.

Medical Staff at Halton Hospital.

Sir FREDRIC WISE asked the Secretary of State for Air the number of boys at Halton College, and the number of tutors, doctors, &c.—Sir S. HOARE replied: The medical staff at Halton Hospital consists of 9 officers and 94 airmen, but their duties are not confined to providing medical attendance for the school, the hospital being a central one for the whole Air Force.

Neurasthenic Clinics.

Captain WATERHOUSE asked the Minister of Pensions what general instructions, if any, had been issued to officials with a view to cutting down the number of patients receiving treatment in neurasthenic clinics.—Lieut.-Colonel G. F. STANLEY (Parliamentary Secretary of the Ministry of Pensions) replied: The general instructions in force are issued with the object of securing that all patients who require it receive appropriate and efficient treatment. The operation of the neurological clinics is under the general supervision of the deputy commissioner of medical services for neurological cases, who is a specialist, and is responsible for seeing that the treatment carried out at the various clinics is both necessary and satisfactory.

Cost of Poor-law Administration in 1924.

Mr. RHYS asked the Minister of Health the cost of Poor-law administration for 1924.—Mr. NEVILLE CHAMBERLAIN replied: The amount expended in England and Wales during the financial year ended March 31st, 1924, on administrative charges in respect of the relief of the poor and purposes wholly connected therewith was £1,187,906.

TUESDAY, DEC. 8TH.

Beds in Naval Hospitals.

Brigadier-General CHARTERIS asked the First Lord of the Admiralty the present number of equipped beds in naval hospitals, and the average daily number of patients in these hospitals during the current year.—Mr. DAVIDSON (Parliamentary Secretary to the Admiralty) replied: The figures are as follows:—

R.N. Hospital—	Equipped beds.	Peace accommodation.
Haslar	1151	1151
Plymouth	756	860
Chatham	872	599
Portland	117	117
South Queensferry	100	100

Information as to the numbers of equipped beds in naval hospitals abroad is not available. The accommodation in these hospitals is as follows: Malta, 365; Bermuda, 78; Hong-Kong, 125; Cape, 48; Wei-Hai-Wei, 38. "Equipped beds" means actual beds and their fittings, including those kept in store, which may or may not be in excess of the amount of accommodation. The average daily numbers of patients in naval hospitals for the period Jan. 1st–Sept. 30th, 1925, were as follows. No later information is available: Haslar, 334; Plymouth, 375; Chatham, 377; Portland, 50; South Queensferry, 44; Malta, 188; Bermuda, 22; Hong-Kong, 54; Cape, 36; Wei-Hai-Wei, 11.

Small-pox at Middlesbrough.

Mr. GROVES asked the Minister of Health whether he was aware that the death from small-pox at Middlesbrough, referred to in the quarterly return of the Registrar-General, No. 306, was really due to some other disease; and whether he could give the age of the patient and state whether the patient had been vaccinated or not.—Sir KINGSLEY WOOD (Parliamentary Secretary of the Ministry of Health) replied: The only death from small-pox registered in Middlesbrough during the quarter ended June 30th, 1925, was in respect of a child aged 1 month. The cause of death given in the medical certificate was "broncho-pneumonia following small-pox," and, in accordance with the general rules, based upon international agreement, which are referred to in the reply given on August 4th last, the death was classified as being due to small-pox. The child had not been successfully vaccinated.

Appeal from the General Medical Council.

Colonel WOODCOCK asked the Prime Minister whether he was aware that a member of the medical profession who was struck off the list by the General Medical Council had no redress or appeal against such decision; and whether he was prepared to set up a committee to investigate the procedure of the Council in its relation to modern methods and usage of the medical profession regarding the Medical Act of 1858.—Major HENNESSY (Lord of the Treasury) replied: I am asked by the President of the Council to say that there is no appeal from the General Medical Council to another court, but a medical practitioner struck off the Register may, at any future session, bring up his case for revision, and his name may be, and often is, restored to the Register. In all inquiries the General Medical Council is assisted by a lawyer of great experience and ability. It has since its creation in 1858 performed the duties entrusted to it without serious criticism, and as at present advised my noble friend does not think that sufficient reason has been shown for setting up a committee of inquiry.

Colonel WOODCOCK: Is the hon. and gallant gentleman not aware that members of the Bar, solicitors, and members of all professions except the medical profession, have an independent court of appeal, and will he take steps to try to get one in this case?—Colonel SINCLAIR: Is it not a fact that practitioners struck off the roll have a right of appeal to the Privy Council, if they care to exercise it?—Major HENNESSY: I will see that Colonel Woodcock's observations are conveyed to my noble friend.

Dispensing in the Army.

Mr. HERBERT WILLIAMS asked the Secretary of State for War whether, in view of the fact that prescriptions containing dangerous drugs and poisons might be dispensed in the Royal Army Medical Corps by persons other than medical officers or pharmacists, he would give instructions that such prescriptions should in future only be dispensed by a medical officer or pharmacist, or under the direct supervision of a medical officer or pharmacist by whom the quantity of the dangerous drugs or poisons shall be checked.—Captain D. KING (Financial Secretary to the War Office) replied: All army dispensaries are under the direct supervision of a medical officer. The only persons, other than medical officers, who may make up prescriptions in these dispensaries are qualified army dispensers, and they may only make up prescriptions signed by a medical officer. I am not aware of any reason for considering that the present procedure is not satisfactory.

Medical News.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—A special fortnight's course in medicine, surgery, and the specialties will commence on Jan. 11th, 1926, at the Prince of Wales's General Hospital (N.E. London Post-Graduate College). On Jan. 4th the Bethlem Royal Hospital will start a series of lecture-demonstrations on Tuesdays and Thursdays at 11 A.M. on the various branches of psychological medicine, the course lasting for four weeks. On the same date the West End Hospital for Nervous Diseases will begin a month's course in neurology; lectures, including clinical demonstrations on selected cases, will be given daily at 5 P.M. The North-Eastern Fever Hospital will hold a three weeks' course in infectious fevers; this course will begin on Jan. 11th and will consist of a series of demonstrations in the diagnosis and treatment of the acute infectious diseases, at 11 A.M. on Wednesdays and Saturdays. A cardiology course will be in progress at the National Hospital for Diseases of the Heart from Jan. 11th to the 22nd. On the 18th the Queen's Hospital for Children will start a fortnight's course in diseases of children, which will include lectures, demonstrations, and operations. The first of a new series of lectures, arranged by the Fellowship of Medicine, will be given on Jan. 21st, when Dr. Herbert Spencer will lecture on Abdominal Palpations in Pregnancy. Other subjects of interest will be dealt with on subsequent Thursdays, the lectures beginning in each case at 5 P.M. A copy of each syllabus and of the general course programme will be forwarded on application to the Secretary of the Fellowship, 1, Wimpole-street, London, W.1.

TUBERCULOSIS SOCIETY.—A meeting of this society will be held to-day (Friday), at 8 P.M., at 1, Upper Montague-street, Russell-square, W.C., when Dr. Otto May will read a paper on Life Assurance and Tuberculosis.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society will be held to-day (Friday) at the Miller General Hospital, Greenwich, S.E., at 8.45 P.M., the President, Dr. Arthur Davies, in the chair, when the Purvis Oration will be delivered by Mr. Wilfred Trotter on the Surgery of Malignant Disease of the Pharynx.

HUNTERIAN SOCIETY.—The second dinner meeting of this society will be held at Simpson's Restaurant, 2 and 3, Bird-in-Hand Court, 77, Poultry, Cheapside, on Monday, Dec. 14th, at 7.30 P.M., when a discussion on Indigestion will be opened, from the medical standpoint by Dr. J. Campbell McClure, from the surgical by Mr. H. W. Carson, and from the mental by Dr. H. Crichton-Miller.

DIPLOMA OF PSYCHOLOGICAL MEDICINE.—A course of lectures and practical work will be held at the Maudsley Hospital, Denmark Hill, London, S.E., Part I. beginning in January, 1926. Those taking part will include Sir Frederick Mott, F.R.S., under whose direction the course will be held, Mr. Charles Geary, Dr. F. Golla, Dr. Henry Devine, Dr. Bernard Hart, Dr. Edward Mapother, Dr. C. Hubert Bond, Dr. F. C. Shrubsall, and Dr. W. C. Sullivan.

THE LONDON (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN.—The annual dinner was held at the Savoy Hotel, London, on Dec. 3rd, Dr. J. Walter Carr presiding. Over 300 past and present students and guests were present. Lord Riddell, the president of the Royal Free Hospital, proposed the toast of the school and hospital and said that in the near future it was proposed to establish even closer union between the London School of Medicine and that hospital. The Chairman, in response, chronicled the retirement of Lr. May Thorne from her post of honorary secretary of the school in order to have more free time to devote to the appeal fund of the hospital, and welcomed as her successor Dr. J. Aitken. During the past year, he added, a new professor of pathology had been appointed in the person of Dr. J. H. Dible; the midwifery department had been brought under the same roof as the hospital, to the great convenience of the students; and nearly 100 students had qualified from the school. Mr. C. Joll proposed the guests, Miss Wilkinson, M.P., and Prof. Yandell Henderson replying. Prof. Henderson spoke with appreciation of the equipment and efficiency of British hospitals and medical schools. In spite of the wealthy foundations of the U.S.A., the position of professors and lecturers in those schools appeared to vary little as between the two countries, and they seemed to him to be at least as well off in Great Britain. The toast of the chairman, proposed by Dr. Chodak Gregory, was received with acclamation which testified to his popularity.

THE house of the Royal Society of Medicine will be closed from Thursday, Dec. 24th, to Monday, Dec. 28th, inclusive.

Mr. C. J. S. Thompson, M.B.E., has resigned his post as Curator of the Wellcome Historical Medical Museum, with which he has been associated since its foundation.

UNIVERSITY COLLEGE HOSPITAL, LONDON.—Mr. S. R. Lamb, who for the last five years has been secretary of the Sheffield Joint Hospitals Council, has been appointed Appeals Secretary to University College Hospital. Mr. Lamb carried out the "Penny-in-the-Pound" scheme, which has had an important effect upon the finances of the Sheffield hospitals.

INVERNESS NORTHERN INFIRMARY.—At a public meeting at Inverness last week it was decided to enlarge Inverness Northern Infirmary at a cost of £100,000. Dr. D. J. Mackintosh, medical superintendent of Glasgow Western Infirmary, has reported that the buildings are antiquated, and has made proposals for the construction of new wards, the existing erections to be retained for administrative purposes and nurses' accommodation. The Northern Infirmary draws patients from all over the Highlands, and nine cases out of ten are surgical.

NEW ISOLATION WARD AT NORTHAMPTON.—Last week the Marquess of Exeter, Lord Lieutenant of the county, opened a new isolation block at Northampton General Hospital. The new wards are named after Sir James Crockett, who has defrayed a large proportion of their cost. An anonymous gift of £5000 has enabled the hospital to provide what Mr. Reginald B. Lǿder, the chairman of the board of management, described as "the very best electrical and X ray department in the whole of the United Kingdom." Since the war £50,000 has been spent in improving and extending the hospital.

THE LATE MR. ROBERT OWEN, L.R.C.P. & S. EDIN. The death has taken place of Mr. Robert Owen, of Penygroes, N. Wales, in his sixty-sixth year. He obtained his medical education at the Anderson College, Glasgow, qualified in 1892, and was a resident house physician at the Royal Infirmary, Glasgow. He took an active part in civic affairs, being a past chairman and alderman of the Carnarvonshire County Council, and chairman of the Joint Police Committee. He had a deep interest in the cause of charity in his district, and his death will be felt as a great loss. He leaves one daughter, who is married.

BIRMINGHAM MEDICAL SCHOOL: CENTENARY CELEBRATIONS.—A special Degree Congregation was held on Dec. 8th at the University, Edgbaston, to celebrate the centenary of the Birmingham Medical School. In the unavoidable absence of the Chancellor, Lord Cecil, the Vice-Chancellor, Sir Gilbert Barling, presided. A message was sent from the Congregation to the Chancellor of encouragement in his great work on disarmament at the League of Nations session at Geneva. The Principal, before presenting the honorary degrees, thanked Sir Charles Hyde for his magnificent gift to the University of £100,000. For the honorary degree of Doctor of Laws were presented: Mr. Neville Chamberlain, M.P., Sir Donald MacAlister, Sir Humphry Rolleston, and Prof. Priestley Smith. Mr. Chamberlain, in his address, referred to his long family and personal connexion with the University. "The University," he said "sets an example of enlightened civic action." The history of the Birmingham Medical School he described as a history of development and evolution, in spite of obstacles, to a position where it was now quite indispensable to the city. He reviewed the extent of public medical services in this country; the School Medical Service employed 1500 doctors, the Health Insurance Scheme treated 14,000,000 people and employed 13,000 doctors. He continued: "I desire to stress that the value of this vast organ of public service, coupled as it is with private service, is not fixed but depends on the persons engaged in it; the value of such an organisation depends on its power to attract to itself the best type of man who can only be produced by adequately equipped and adequately managed medical schools." He went on to indicate the lines along which progress might be made by extending post-graduate teaching and research, by reinforcing the existing local Cancer Board and the Board of Medical Research, and by keeping the public informed of the needs and hopes of the school.

In the evening a reception was held in the Great Hall by the Vice-Chancellor, the Principal, Mr. C. Grant Robertson, and the Dean of the Faculty of Medicine, Mr. W. F. Haslam. Amongst the notable medical exhibits set out for inspection were the portraits of Mr. William Sands Cox, F.R.S., founder of the Medical School and Queen's Hospital; of John Ashe, the founder of the General Hospital (1793); and of George Freer, surgeon to the General Hospital, who was the first surgeon successfully to ligature the external iliac artery for aneurysm. Side by side were to be seen a modern operating theatre completely equipped, and one of Lister's time, with the actual spray and table used by him and later by Sir William Macewen. Among many other arresting exhibits should be noted an admirable series of dissections of the cardiac auriculo-ventricular bundle, and a series of specimens showing the madder method of research on bone development.

INTERNATIONAL TUBERCULOSIS CONFERENCE.—The next International Conference will be held at Washington, U.S.A., on Sept. 30th, Oct. 1st and 2nd, 1926. The International Union against Tuberculosis was founded in 1920. The headquarters are in Paris and in close relationship with the League of Red Cross Societies. Tuberculosis conferences under the auspices of the Union have been held at Paris (1920), London (1921), Brussels (1922), and Lausanne (1924). Subjects of great interest and exchange of ideas and methods for dealing with tuberculosis have been considered at these conferences, which are attended by leading scientists from all over the world. The International Union is directed by representatives of all the national tuberculosis associations, or in the absence of such association by representatives of the Government, of the countries within the League of Nations and the United States of America. Each country is represented on the Council of the Union by a definite number of representatives, Great Britain having five such official delegates. The conferences are open to members of the public on application to the respective National Association, and on payment of a small fee. At the forthcoming conference the subjects chosen for discussion are: (1) the part played by contagion in tuberculosis among adults; (2) anatomical structure of tubercle, from histogenesis to cavity; (3) tuberculosis and milk. Further particulars may be obtained from the Secretary, National Association for the Prevention of Tuberculosis, 20, Hanover-square, London, W. 1.

MANCHESTER CANCER HOSPITAL AND RESEARCH CAMPAIGN.—The thirty-third annual report of the Christie Hospital (Cancer Pavilion and Home) states that the total of patients under treatment numbered 450 and the operations performed 323. The gifts and bequests amounted to about £18,000, including one of £3500 and three of £1000 each. The committee approves of the suggestions of the Cancer Research Committee as to coöperation with other institutions, and that the income from the Christie Hospital funds specially earmarked for this work should be pooled, but stipulates that the headquarters of the work should be at Manchester University, and that each institution should be represented on the Cancer Research Board in proportion to the funds it provides. The report of the medical board states that the youngest patient admitted during the year was 14 years of age, the oldest 84, and the average age 49. Of the 406 new in-patients, 112 were inhabitants of Manchester and 23 of Salford. A large proportion of the patients had been treated by radium. Mr. Wilson H. Hey, honorary surgeon to the hospital, said that in the Manchester district there were a million people of 40 years and over, and of this number they knew that 100,000 would die of cancer. Cancer did not attack the weak, but the strong and healthy. At present, though it seemed hardly believable, there were not 12 whole-time cancer research workers in these islands. We could not expect an early result with so few workers on this or any other obscure problem. Prof. R. B. Wild emphasised the fact that the local cancer committee was raising a separate fund in order to investigate what wanted investigation very much—the local conditions under which cases of cancer occurred, the environment of the patients, their occupations, their houses, and many other things. It was announced that the board of management had decided to extend the hospital.

UNIVERSITY OF LIVERPOOL.—At the meeting of the University Court on Nov. 30th it was stated that students' fees met only one-third of the running cost of the University. In the current year the University would receive £11,200 additional grant from the Treasury, representing part of the University grant cut off under the Geddes axe. The Cheshire County Council had agreed to increase their grant from £300 to £1000, and the Lancashire County Council would in all probability raise their grant from £2000 to £4000. A warm tribute was paid to the untiring single-handed fight of Prof. J. Share-Jones, director of veterinary studies, extending over a period of 20 years, to secure Government recognition of veterinary science in a university. The Development Commissioners have decided to make a grant up to £15,000, on a pound-to-pound basis, for the erection of new buildings for the veterinary school. This is the first occasion on which funds have been offered from a Government source for the provision of buildings in the University. The expenditure on the general account is now in the neighbourhood of

£200,000, as compared with £80,000 only ten years ago. Vice-Chancellor J. G. Adami, in his report, stated that the number of women entering medicine had declined until it had reached almost vanishing point. The reduction was explained by the fact that women poured into the medical schools during the later years of the war and until three years ago, only to discover when they graduated after the war that it was almost impossible to obtain posts. The falling off in the number of dental students was a grave matter, for the country was in need of well-qualified dentists. The Act of 1920, with the object of preventing the extension of unqualified practice, demanded four years spent in training with relatively high fees. The question was whether it did not raise the requirements of qualification above the economic level, and while this was in doubt, the General Medical Council demands the equivalent of an additional year of study of pre-registration chemistry and physics. Throughout the country the admissions to dental schools had fallen to an alarming degree. An inquiry made in the summer term brought to light the fact that out of 1750 full-time students only 300 at the most indulged in sports and games. The time was ripe, and indeed overdue, Dr. Adami held, for the compulsory medical or physical examination of all students—men and women—upon admission, and periodically in later years, by a qualified medical staff, who would advise students regarding any special form of exercise and special care to be taken in individual cases.

DONATIONS AND BEQUESTS.—Sir James Crockett has given £500 (£5500 in all) to Northampton Hospital extension.—Miss Catherine Beatrice Muntz, Tunbridge Wells, besides other bequests, left £2000 upon trust to assist young lads suffering from incurable disease, and £100 to the British Home for Incurables, and £50 each to a large number of charitable institutions.—Miss Agnes Ann Best, Cleveland-square, W., left £1000 to Manchester Royal Eye Hospital, and £250 each to St. Bartholomew's Hospital and the Paddington Green Children's Hospital.—Sir Charles Hyde, Bart., has given unconditionally a contribution of £100,000 to the University of Birmingham, and has left the spending of it entirely to the discretion of the Council of the University.—In celebration of his seventy-fifth birthday Mr. Bernhard Baron, of Hove, Sussex, has distributed £50,000 among hospitals and charitable institutions, and the Home for Aged Jews and three London Hospitals—Guy's, St. Thomas's, and St. Bartholomew's—receive each £2000, and the following £1000 each—viz.: Royal Northern Hospital, Hospital for Sick Children (Great Ormond-street), Royal Free Hospital, City of London Hospital for Diseases of the Heart and Lungs (Victoria Park), West London Hospital, Westminster Hospital, Royal London Ophthalmic Hospital (Moorfields Eye Hospital), University College Hospital, Brompton (Consumption) Hospital, St. Mary's Hospital (Paddington), St. George's Hospital, Home for Aged Jews (Home of Rest Building Fund), Rockefeller Foundation Gift for Obstetric Hospital, Prince of Wales's General Hospital (Tottenham), Reedham Orphanage, National Children's Home and Orphanage, Dr. Barnardo's Homes, Jewish Board of Guardians, Greater London Fund for the Blind, Salvation Army (Maternity Home), and British Legion (Earl Haig's Fund).

Appointments.

MASTERMAN, L. MARGARET T., M.B., B.S. Lond., has been appointed Assistant Medical Officer, Selly Oak Hospital, Birmingham.

Queen Charlotte's Maternity Hospital, Marylebone-road, N.W.: HAMILTON, G. E. R., M.R.C.S., L.R.C.P. Lond., M.B., B.S., Senior Resident Medical Officer; DAVIES, YVVYAN J., M.R.C.S., L.R.C.P. Lond., Assistant Resident Medical Officer.

Westminster Hospital: BELL, P. S., M.R.C.S., L.R.C.P. Lond., and JONES, D., M.R.C.S., L.R.C.P. Lond., House Physicians; DAVIES, J., M.R.C.S., L.R.C.P. Lond., and RUBRA, E. J., M.R.C.S., L.R.C.P. Lond., House Surgeons; and DANIEL, G. M., M.R.C.S., L.R.C.P. Lond., Resident Obstetric Assistant.

Vacancies.

For further information refer to the advertisement columns.

Alexandria Municipality.—Chief Bacteriologist. L.E.900.
Bangor, Carnarvonshire, and Anglesey Infirmary.—H.S. £200.
Bath Ear, Nose, and Throat Hospital.—Hon. Dental S.
Bombay, Gokuldas Tejpal Hospital.—Hon. P. and two Hon. S.'s.
Bridge of Weir, near Glasgow, Consumption Sanatoria of Scotland.—Res. Med. Asst. £200–£250.
Brighton, New Sussex Hospital for Women and Children.—Radiologist. £100.
Brighton, Royal Sussex County Hospital.—Third Hon. Anæsthetist.
Bristol General Hospital.—Hon. Asst. S. to Ear, Nose, and Throat Dept.
Bury Infirmary.—Jun. H.S. £150.
Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.
Chichester, Royal West Sussex Hospital.—Jun. H.S. £150.
City of London Hospital for Dis. of Heart, &c., Victoria Park, E.—P. to Out-patients.
Coventry and Warwickshire Hospital.—H.S. £135.
Dreadnought Hospital, Greenwich, S.E.—H.P. and H.S. Each at rate of £110.
Durham, Holywood Hall Sanatorium.—Med. Supt. £850.
East London Hospital for Children and Dispensary for Women, Shadwell, E.—Morning Cas. O. At rate of £120. Also H.S. At rate of £125.
Herefordshire General Hospital.—Hon. Orthopædic S.
Hospital for Sick Children, Great Ormond-street, W.C.—Res. Med. Supt. £300. Also H.S. £50.
Liverpool University.—Lecturer in Anatomy. £400.
Liverpool, Walton Institution, Rice Lane.—Res. Asst. M.O. £200.
London Homœopathic Hospital, Great Ormond-street, W.C.—Three Res. M.O.'s. At rate of £100.
London Hospital, E.—Asst. Obstet. and Gynæcological S.
Manchester, Monsall Hospital for Infectious Diseases.—Jun. Med. Asst. £350.
Middlesex Hospital and Medical School, W.—Two Surgical and One Medical Registrarships. Each £300.
Middlesex Hospital Medical School, W.—Cancer Research Scholarships. Each £150.
Mount Vernon Hospital, Northwood, Middlesex.—Jun. Res. M.O. £150.
Norwich, Norfolk and Norwich Hospital.—Res. Anæsthetist. £150.
Nottingham General Hospital.—Res. Cas. O. At rate of £200.
Oldham Royal Infirmary.—H.S.'s. Each at rate of £200.
Plaistow Fever Hospital, E.—Second Asst. M.O. £200.
Portsmouth Royal Hospital.—Third H.S. and Cas. O. At rate of £150 and £100 respectively.
Queen Mary's Hospital for the East End, Stratford, E.—Res. M.O., H.P. Two H.S.'s. Obstet. H.S. H.P. And Cas. O.
Royal Free Hospital, Gray's Inn-road, W.C.—Dist. Obstet. Asst. £100.
Royal London Ophthalmic Hospital, City-road, E.C.—Refraction Asst. £100.
St. Bartholomew's Hospital.—Asst. Ophth. S.
St. Mark's Hospital for Cancer, &c., City-road, E.C.—Anæsthetist. £25.
St. Mary's Hospital, Institute of Pathology and Research.—Research Studentship. At rate of £200.
St. Peter's Hospital for Stone, &c., Henrietta-street, Covent-garden, W.C.—Clin. Asst.
Salford Royal Hospital.—Cas. H.S. At rate of £125.
Salisbury General Infirmary.—Hon. Ophth. S.
Scarborough Hospital and Dispensary.—Two H.S.'s. Each £126.
Sheffield Royal Infirmary.—Ophth. H.S. £80.
South London Hospital for Women, South Side, Clapham Common, S.W.—Clin. Assts.
Talgarth, Breconshire, Mid-Wales Counties Mental Hospital.—Asst. M.O. £350.
Willesden General Hospital, Harlesden-road, N.W.—Gynæcologist. Also Hon. P. to Out-patients.

The Chief Inspector of Factories, Home Office, London, S.W., announces vacant appointments for Certifying Factory Surgeons at Oxted, Surrey, and Tenbury, Worcestershire.

Births, Marriages, and Deaths.

BIRTHS.

CROWDEN.—On Nov. 29th, at Croyland, Edgware, the wife of Guy Pascoe Crowden, B.Sc., M.R.C.S., of a son.

HARVEY.—On Nov. 26th, at 12, Western Hill, Durham, the wife of Dr. Charles A. Harvey, of a son.

HUGHES.—At Lahore, India, on Nov. 17th, 1925, the wife of Major T. A. Hughes, I.M.S., of a son.

DEATHS.

BATE.—On Dec. 1st, at King Edward-road, South Hackney, E., George Paddock Bate, C.B.E., M.D., aged 82 years.

CLARKE.—On Nov. 27th, at Woburn-square, W.C., George Mouat Keith Clarke, M.R.C.S., L.R.C.P., formerly of Gerrard-street, W., and Invercargill, N.Z., in his 88th year.

DAVIS.—On Nov. 25th, at Malone Park, Belfast, Lieut.-Colonel R. E. S. Davis, I.M.S., late Civil Surgeon, Rangoon, Burma.

GREEN.—On Dec. 1st, at Airhill, Glanworth, Co. Cork, Lieut.-Colonel James Sullivan Green, late R.A.M.C., aged 64.

SHAW.—On Dec. 2nd, at Dunstan-road, Golders Green, Oliver Shaw, M.D., late of Moseley, aged 71.

THOMAS.—On Nov. 29th, Philip Marsden Thomas, L.S.A., L.R.C.P.I., L.M., L.D.S., F.P.S.G., of Thornton-avenue, S.W., aged 61.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Monday, Dec. 14th.

WAR: at 5 P.M.
Paper:
Surg.-Commander J. L. Priston, R.N.: The Prevention of Scurvy in the Royal Navy.

Tuesday, Dec. 15th.

GENERAL MEETING OF FELLOWS: at 5.30 P.M.

Wednesday, Dec. 16th.

HISTORY OF MEDICINE: at 5 P.M.
Paper:
Dr. J. D. Rolleston: Voltaire and Medicine (Part II.).

Thursday, Dec. 17th.

DERMATOLOGY: at 5 P.M. (Cases at 4 P.M.)
Cases:
Dr. H. C. Semon: Multiple Idiopathic Sarcoma (Kaposi).
Dr. Barber: Lupus Pernio showing Result of Treatment with Carbon Arc Lamp.
Other cases will be shown.

DERMATOLOGY. STUDY OF DISEASE IN CHILDREN. } at 8.30 P.M.
Discussion on
The Ætiology and Treatment of Infantile Eczema.
Speakers:
Dr. H. C. Cameron and Dr. F. Langmead (for the Section for the Study of Disease in Children).
Dr. A. M. H. Gray (for the Section of Dermatology).

Friday, Dec. 18th.

ELECTRO-THERAPEUTICS: at 8.30 P.M.
Papers:
Dr. R. E. Roberts and Dr. Morris J. Cohen (Liverpool): Paget's Disease of Bone.
Dr. P. J. Briggs (New Lodge Clinic): Methods of Examination of the Pelvic Cæcum.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Dec. 14th.—8.30 P.M., Discussion on the Treatment of Genito-Urinary Tuberculosis in the Male, to be introduced by Mr. Cyril A. R. Nitch, followed by Mr. Kenneth M. Walker, Dr. Stephen R. Gloyne, and others.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square.
THURSDAY, Dec. 17th.—8.15 P.M., Sir Thomas Carey Evans: Paper on the Surgical Aspects of Amœbiasis. Discussion to be opened by Major K. K. Chatterji, of Calcutta. Lantern slides will be shown preceded by a demonstration at 7.45 P.M.

CHELSEA CLINICAL SOCIETY.
TUESDAY, Dec. 15th.—8.30 P.M. (in the Board Room of St. George's Hospital), Colonel W. L. Watt and Mr. S. Forsdike: Discussion on Deep X Ray and Radium Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Dec. 14th, to SATURDAY, Dec. 19th.—Lecture Room of the Medical Society, 11, Chandos-street, W. Sir John Thomson-Walker will deliver a lecture on Urinary Tuberculosis at 5.30 P.M. This lecture is open to all members of the medical profession free of charge. —HAMPSTEAD GENERAL HOSPITAL, Haverstock-hill, N.W. Second week of a Course in General Medicine, Surgery, and the Specialties. Daily, 4.30 to 6 P.M. Lectures and demonstrations.—HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars-road, S.E. Course in Skin Diseases, second week. Instruction in the Out-patient Dept. every afternoon from 2.30, and a Venereal Clinic Tuesday and Friday, 5 P.M. All information as to fees, &c., from the Secretary of the Fellowship.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone-road, N.W.
THURSDAY, Dec. 17th.—5 P.M., Mr. L. Williams: Albuminuria of Pregnancy.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Dec. 18th.—4 P.M., Dr. Dan McKenzie: Early Mastoid Operations.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Dec. 16th.—4 P.M., Prof. L. McIlroy: The Results and Prevention of Puerperal Sepsis.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Dec. 15th.—4.15 P.M., Dr. A. H. Holmes: Disorders of the Thyroid Gland.
FRIDAY.—4.15 P.M., Sir William Milligan: Modern Technique in the Diagnosis and Treatment of Foreign Bodies Impacted in the Air Passages.

JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.
TUESDAY, Dec. 15th.—4 P.M., Prof. A. Patrick: The Treatment of Diabetes.

Notes, Comments, and Abstracts.

THE HYGIENE OF MENSTRUATION.

AN AUTHORITATIVE STATEMENT.

A STATEMENT, based on the published observations of doctors who have had opportunities of examining large numbers of girls, has been issued under the auspices of the Medical Women's Federation.[1] It is intended primarily for the use of schoolmistresses and parents, and should serve to make clear the modern view that a girl during the time of menstruation should not be considered "unwell." Its terms are as follows:—

Menstruation is a natural function; it is not an illness, and girls should therefore continue their ordinary work and play during the period. It should not be and is not normally accompanied by pain or malaise.

There is no risk in taking a bath during the period; in fact it is desirable that a warm bath should be taken daily. It is a good remedy for any slight pain or headache which may occur. Where the girl is accustomed to a daily cold bath this may be continued during the period, but for obvious reasons swimming in public baths cannot be allowed.

It is important that there should be a daily action of the bowels.

There is no risk in allowing a girl to join in ordinary games and gymnastics. Exercise, especially exercise involving bending of the body, has been found in many cases to lessen or cure menstrual pain. The practice of giving alcohol in any form at these times is most inadvisable.

Girls should not be allowed to get into the habit of resting or lying down at this time. It has been found by medical officers of girls' schools that this leads to menstrual pain and malaise, which does not occur when girls continue their ordinary games, walks, and other exercise.

While it is desirable that girls should take part in games, long expeditions or cycle rides, or matches or competitions in which there is a strong incentive to exhaust the reserves of strength should be indulged in with some caution, especially during the early years of adolescence.

If a girl suffers from pain or other disability, it is a sign that there is something wrong, and it is essential that a doctor should be consulted. The underlying conditions are much more easily cured at the onset.

The advice is sound, especially the recommendation to discourage girls from lying down or resting during these periods as a routine measure. If attention is focused on any slight discomfort it will assuredly be looked for, whereas if little disturbance of ordinary life is the rule, few girls will be found to require special measures.

THE INFLUENCE ON HEREDITY OF JEWISH CUSTOMS.

IN the course of a lecture delivered on Dec. 5th at the Whitechapel Art Gallery under the auspices of the Jewish Health Organisation of Great Britain Dr. Redcliffe N. Salaman discussed heredity as a factor in public health. He spoke of the inheritance of mental deficiency, as exemplified in one deplorable family record, contrasting it with the incidence of ability and high character shown, for example, in the Darwin-Galton-Wedgwood family. Here, in five generations, besides numerous men of high character and civic worth, occurred 16 men of highest rank in science, and the women-folk include a well-known poetess and others of outstanding ability. Considering what these two types of families mean to the nation, Dr. Salaman said that a mental defective who lived to the age of 50, and was cared for by the public authorities, could not cost the State less than £5000, whilst the indirect loss occasioned by such an individual probably reached a similar amount. Sterilisation of mental defectives was probably beyond the limit which public opinion would sanction, and possibly beyond what science would to-day be inclined to dictate. The Jewish community might, however, make a register of such persons, and keep them under surveyance, in order that any defective children might at once be segregated. This would enable them to learn more of the nature of heredity of such troubles, and when sufficient information had been collected the necessary measures could be taken to prevent the increase of such defects. It might seem to many that proposals to segregate individuals for life, or to abolish their power of activity, was too drastic a remedy. If any who thought this would but inquire what it already costs the nation to maintain these unfortunates in careful

[1] Medical Women's Federation News Letter, November, 1925, p. 53. Obtainable from the office of the Federation, 9, Clifford-street, Bond-street, London, W., in leaflet form. 1s. per 100 copies.

segregation till the age of 16, only to allow them to propagate their kind when they regained freedom, they would see good reason to alter their views. But even without legislation much could be done. Parents of children who are epileptic or are deficient in any way should do their utmost to prevent their children from marrying. In Jewish circles marriage had been considered with such veneration that even degenerates had been forced into the marriage state. It was to this practice that they owed the lamentable fact that their community contained such a large proportion of mentally unfit. It was, however, right to point out that the fact that the percentage of highly gifted was also abnormally high in their midst, was also due to heredity, and to their anxious pursuit of the marriage state. The old custom of marrying the rich man's daughter to the most promising student of the Yeshibah was one of the most successful and illuminating eugenic experiments ever conceived. The time had now come when, whilst adhering to all that was sound in the old, they must advocate new methods in order to promote the betterment, moral and physical, of mankind.

ESKIMOS AND THEIR HEALTH.

IN a description[1] of the health of the Eskimos, Dr. S. K. Hutton, who has spent seven years in Northern Labrador, first outlines the climate, the food, and habits of life. The climate is comparatively regular; the excessive cold of winter only giving place for a few short weeks to summer. The only break in the regularity is the sudden occurrence for three or four days of a period of thaw in either February or March. Eskimo dietary is mainly flesh and fish; vegetable foods are decidedly scanty. They cultivate no plants, but obtain in autumn a small black watery berry which is stored in barrels and allowed to freeze for winter store. Of flesh that of seal is the most important, and is eaten raw and full of blood; fish also, in the warmer part of the year, is obtained in plenty and is eaten fresh, often raw or dried, without salt. Cod-liver oil is used considerably; dried fish is dipped in it. The dietary is rich in vitamins, with the exception of the anti-scorbutic vitamins. The Eskimo lives a life of activity and strain. He has great power of withstanding fatigue, and is inured to exposure to the weather. His house is small, ill-ventilated, dirty, and ill-smelling—a dark and noisome den. Refuse is simply thrown out of the door where, fortunately, it freezes—but in summer it thaws. Promiscuous consanguinity prevails.

The Eskimo possesses a low resisting power to disease; few live beyond 60, those few are aged and feeble. They possess a tendency to hæmorrhage, of which epistaxis, menorrhagia, and hæmoptysis are the most common form, the latter quite distinct from that of pulmonary tuberculosis. These hæmorrhages indicate a scorbutic condition, and lime juice is the most effective remedy. Although the Eskimos will run far and fast without affecting their pulse-rate, and endure laborious toil, when they are seized with illness cardiac debility becomes pronounced. Similar debility occurs during confinement, but only prolongs the process, which is usually simple and uneventful. Typical scurvy is rare, but the scorbutic tendency is common, particularly if the berry crop fails, as it did in 1904–5. Then "kallak," a pustular skin eruption, broke out, but it gave way to anti-scorbutic treatment. The tendency to suppuration is pronounced; nearly all cases of mumps end in suppuration, as do many ordinary bruises. Typhus appeared once, but was fortunately quickly eradicated, for lice are common in Eskimo huts. Tuberculosis is not widespread, but attacks certain families, who are carried off with "galloping consumption"; it is a very fatal disease, and death may result in about six weeks from onset. Diseases of the nervous system are not common, with the one exception of paralysis of the facial nerve due to cold winds. Occasionally drunkenness occurs, but chronic alcoholism is unknown. Epilepsy occurs among the Eskimos, but insanity is uncommon, even though the mental balance is unstable. Inguinal hernia is uncommon, but a form of small epigastric hernia occurs in males. The commonest eye disease is pterygium, attributable to the irritating effect of strong light; it occurs more frequently in women than in men, since the man wears glasses to protect him from snow-glare, while the woman often just goes out of the dark hut into the bright light without glasses. Snow-blindness is common among children, but it always ends in recovery. Dr. Hutton never saw a case of malignant new growth, nor of rickets. Babies suckle often for two years, and any mother feeds any child. For the most part Eskimos are very sensitive to drugs, normal doses being poisonous to them. Mercury is an exception. Influenza is endemic, and does not appear to have been introduced from without. It arises annually in February with the short seasonal thaw, and again in August. Its origin is ascribed to the method of refuse disposal; specially interesting instances of outbreaks are given. The disease may be bronchial, gastric, or meningitic, varying in epidemics; the gastric form is the most fatal.

A disease which is causing great damage to the Eskimos is syphilis, which was brought back by a party of Eskimos who had been exported for exhibition purposes. Although its introduction is recent, the ravages it is causing do not compare in severity with those which followed its introduction in Europe. Primary symptoms tend to be somewhat indefinite; but the secondary manifestations are clear, except that a secondary rash is rare. The disease is so recent that tertiary manifestations have not, it is said, yet had time to develop. The full-blooded meat-eating Eskimos seem to have a natural protection against it. Child mortality is excessive, and is no new thing, since the ancient burying places are full of children's graves; but it appears to be getting worse. Even those that survive the first year run serious risk during the ages 3 to 5. The main causes of this great mortality among Eskimo children lie in constitutional debility and lack of resisting power to disease. Dr. Hutton discusses the future of the Eskimos, and feels uncertain whether, as Europeanisation spreads, the race will survive.

This monograph contains much valuable material presented as the result of first-hand observation. Illustrations are lacking, but these can be found by consulting an excellent article[2] recently published on the MacMillan Arctic Expedition.

THE HEALTH OF AN ARMY IN THE FIELD.

HEALTH was well represented in the wireless programmes on Dec. 4th, with "Hygiene in the Kitchen" from Oslo, "Hygiene" from Paris, and, above all, Sir W. B. Leishman, in London, on the "Health of an Army in the Field." Diseases, said the Director-General, were more dangerous to soldiers than were wounds. Wellington lost 460,000 men in the Peninsular campaigns, only 60,000 of them from wounds. To keep an army healthy is a laborious and never-ending toil. Formerly there were five who died of disease to each one killed by the enemy; but in the Great War, of the 739,000 who were killed or died, only 84,000 died of disease, 8 in battle to 1 of disease, a triumph for the medical service. Recruits when taken in were carefully trained physically, made thoroughly healthy and tough; surely they would remain healthy? Far from it. Dangers are greater than before; so many more men are engaged. Freedom of communication allows exotic disease to disseminate more freely; there were 14 theatres of war, in many of which troops of various races were employed. To what was the medical victory due? To five particular lines of policy. (1) Food. By the self-sacrifice of those at home the army had in plenty, but as the usual foodstuffs became unattainable the difficult adjustments needed to keep the ration balanced were made possible by research. (2) Water was often difficult to obtain, but safe supplies were ensured from dangerous sources by filtration and chlorination. (3) Hygiene and sanitation were carefully watched, on the march, in villages, in the trenches, with ever-increasing warfare against flies. Our army had advantage over others in that the responsibility for the sanitation of units is, with us, shared by the commanding officer and the medical officer. Our men had good clothing and baths, and their vermin were destroyed. (4) Disease was detected early by pathologists at every hospital, and in mobile laboratories up almost to the fighting line. Quick detection of epidemic diseases is of the first importance to prevent spread, whether by infection, by food, or by bad water. (5) Inoculation. Vaccination prevented small-pox; typhoid, the disease we most feared, was held in check by inoculation. The French, who did not at first inoculate, had in the first nine months 7036 deaths from typhoid, while England had but 208 in the whole war. But that we had so well devised methods for preventing disease, the losses of the war would have been infinitely worse.

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[1] Health Conditions and Disease Incidence Among the Eskimos of Labrador. By S. K. Hutton, M.D. Pp. 74. 1925. J. Looker, Ltd., The Wessex Press, 82, High-street, Poole. 6s.

[2] The MacMillan Arctic Expedition Returns. By D. B. MacMillan. The Nation. Geograph. Mag., xlviii., November, 1925, pp. 477–518.

GIFTS TO MIDDLESEX HOSPITAL.—A "Rejected lover who has no more use for them" has sent to the Middlesex Hospital two gold and platinum brooches to be sold for the benefit of the rebuilding fund.

A HOSPITAL SCHOOL.—At the Northcourt Hospital for Sick Children in College-crescent, Hampstead, the London County Council conducts a handicraft school for children between 4 and 15 years of age. There are at present 34 children in the school, who are taught needlework, basket-making, knitting, and similar crafts during their convalescence. The hospital was established half a century ago for the treatment of children suffering from chronic or incurable diseases of an aggravated character.